PALESTINE

Annual Report

of the

Department of Agriculture and Forests

for the year ending March 1935

by

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JERUSALEM

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ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE AND FORESTS

FOR THE

YEAR ENDING MARCH, 1935.

CONTENTS:

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1. General Review by the Director of Agriculture and Forests.
2. Report on the Agricultural Service.
3. Meteorological Data.
4. Report on the Veterinary Service.
5. Report on the Forest Service.
6. Report on the Horticultural Service.
7. Report on the Entomological Service.
8. Report on Sericulture.
9. Report on Fisheries.
10. Report on Kadoorie Agricultural Schools.
11. Report on General Agricultural Council.

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE AND FORESTS

FOR THE YEAR

ENDING MARCH 31st, 1935.

SECTION I.

AGRICULTURE — GENERAL

CLIMATE AND CONDITION OF CROPS, ETC.

During the year commencing the 1st of April, 1934, and ending the 31st March, 1935, rainfall was generally abundant and on the whole well distributed. Average crops were harvested. Nevertheless, to encourage farmers to grow more forage crops, seed loans to the extent of £P.5,500 were issued, and larger areas were planted to maize. 20 tons of selected maize seed were distributed to farmers from Agricultural Stations to stimulate the cultivation of this crop on the understanding that a proportion of the crop would be set aside for making silage. Agricultural Inspectors succeeded in persuading farmers to construct over 400 silo pits each of which was filled with 4 to 7 tons of conserved fodder. Tibn was plentiful and cheap.

El Doodeh (*Scythris temperatella*) again caused damage to cereals over an area of some 40,000 dunams. The heavy storms in the Samaria District in February, 1935, destroyed cereals and fruit trees to the value of £P.20,000.

Vegetable production continued to increase although the supply was still less than the demands of the increasing population. Local supplies of poultry, eggs and dairy produce also increased and were easily disposed of, but heavy imports were necessary to meet the deficiency of local supplies.

The sinking of new wells was continued, marking a further step in the intensification of agriculture.

VISIT OF THE AGRICULTURAL ADVISER TO THE SECRETARY OF STATE.

Mr. F. A. Stockdale, C.M.G., C.B.E., Agricultural Adviser to the Secretary of State, visited Palestine and Trans-Jordan in March-April, 1935, and spent five weeks in seeing the various agricultural and horticultural stations, forest nurseries, and plantations, and animal quarantine stations, etc. so as to become acquainted on the spot with the multifarious activities of the Department. Arrangements were also made for Mr. Stockdale to discuss matters of agricutural interest with unofficial agricultural institutions and to meet representatives of all interests concerned in agricultural development throughout the country. Mr. Stockdale's report on his visit has since been printed.

CO-ORDINATION OF RESEARCH

Khalil Eff. Mikdadi, an Agricultural Inspector, was seconded for duty with the Plant Pathologist of the Rehovoth Experimental Station of the Jewish Agency. This officer is to remain at Rehovoth for instruction in Mycological work during a period of two years and is to assist in maintaining liaison between farmers and the Experimental Station and in conducting demonstration work in the villages.

Grants to the Experimental Station of the Jewish Agency were continued in 1934/35 for the following purposes :—

Citrus Research	£P.3,000
Intensive Farming Experiments	£P. 300
Hillside Fruit Station at Kiryath Anavim.	£P. 300
Field Experiments	£P. 500
Horticulture	£P. 500
Animal Nutrition and Dairying	£P. 500
Mycology	£P. 350

The Citrus Advisory Research Committee continues to co-ordinate work at the Research Station at Rehovoth with that at the Government Citrus Demonstration Station at Sarafand.

ENTOMOLOGY

There was some improvement in the Black Scale situation this year and citrus groves are gradually but only very slowly becoming cleaner. 185,474 citrus trees were fumigated, 35,777 trees were pruned, and 4,192 trees were cut down. Fumigation costs have come down from 70 mils a tree in 1932 to 45-50 mils last year; but much litigation is still necessary to recover fees due to Government.

Spraying or fumigation against Red Scale (*C. auranti*) on citrus trees is becoming more wide-spread.

Investigations for the control of Capnodis were continued. These beetles constitute a serious menace to the growing of stone fruits.

The Entomological Service inspected 10,371 consignments of plants, fruits, vegetables, and seeds, etc. imported into Palestine during the past year, and it was necessary to confiscate and destroy 1,296 of these consignments in order to prevent the introduction and spread of diseases.

SERICULTURE

24,000 mulberry trees were distributed to growers from Government nurseries last year and rearing of silk worms and cocoons was carried out at 22 schools.

FISHERIES

The survey of Palestine Fisheries has been completed by Mr. J. Hornell, F.L.S., F.R.I., and his report has been printed. The Fishery Ordinance and Regulations thereunder have, in consequence, been revised and will be enacted in the near future.

The catch of fish reflects an increase over that in the preceding years, vide the following table :—

	Tons		Value	
	1933	1934/35	1933	1934/35
NORTH			£P.	£P.
Zeeb	36	32	1,825	1,124
Acre	61	65	3,501	3,261
Haifa	413	495	17,609	17,484
Tantoura	23	19	1,355	1,109
SOUTH				
Jaffa	370	584	13,703	19,528
Joura	147	87	4,417	3,216
Gaza	61	38	2,323	1,540
LAKE TIBERIAS	190	270	3,230	4,538
LAKE HULEH	240	250	4,800	5,000
Total	1,541	1,840	52,763	56,800

This increase in value is attributed largely to the catches of Italian trawlers off the Palestine coast.

There was also some increase in the number of boats and fishermen engaged in the industry, thus :—

	No. of Boats		No. of Fishermen	
	1933	1934	1933	1934
Northern District	147	164	376	440
Southern District	230	242	320	370
Lake Tiberias	55	65	172	212
Lake Huleh	10	8	88	88
Total	442	479	956	1,110

Despite the larger catches, imports of fish increased considerably, owing to the growth in population, thus :—

	1933		1934	
	Tons	£P.	Tons	£P.
Fish in brine, salted and smoked	1,152	25,921	1,160	37,812
Tinned Fish	583	26,913	1,112	49,389
Fresh Fish	1,218	46,134	1,458	54,518
Total	2,953	98,968	3,730	141,719

62 fishermen were prosecuted for fishery offences, in most cases for using dynamite.

KADOORIE SCHOOLS

The Tulkarm School for Arab students completed its fourth year of instruction. A new wing was added to the school, the greater part of the cost being

met from the private purse of the High Commissioner, making it possible to accommodate 30 additional students. The classes are now therefore distributed as follows :—

1st year students	30
2nd year students	30
Extension class	10
TOTAL	70

In addition, 200 dunams of land adjoining the school have been acquired increasing the total area to 605 dunams.

The Mt. Tabor School for Jewish students was opened in June, 1934, commencing with 27 students. Arrangements were made for the reception of 23 additional students in the second scholastic year (September 1935), bringing the total number in residence to 50.

At both schools, the health and discipline of the students have been good. There is suitable provision for sports and athletics.

ADVERTISING OF CITRUS FRUITS

In order to launch a more extensive and effective advertising campaign, Government granted a loan of £P.8,000 to the citrus industry which, together with the advertising fee of 3 mils on each box of citrus fruit exported, brought the total advertising fund up to £P.22,650. The industry as a whole now appreciates the value of advertising and intends to renew these campaigns on at least the same if not a larger scale in future years, as one of the means to stimulate sales, in order to dispose of the ever-increasing crop.

AGRICULTURAL MACHINERY

It is particularly in the Jewish settlements that modern machinery is largely employed, including combined harvesters, tractors, seed and fertilizer drills and modern dairy appliances. The wealthier and more progressive land owners in Arab villages are also gradually acquiring modern machinery. The imports of agricultural machinery increased from a value of £P.16,392 in 1932, to £P.77,467 in 1934.

MANURES AND FERTILIZERS

The value of chemical fertilizers imported in 1934, was £P.104,724 being double the value of the imports in 1932, namely, £P.50,211.

Although the use of chemical fertilizers in the Arab villages is not yet general there was a significant increase in the use of phosphatic and nitrogenous fertilizers as a result of the demonstration plots established in co-operation with fertilizer companies who supply these fertilizers.

The organic manure problem remains to be solved. This question is receiving the attention of a special committee appointed for this purpose by the General Agricultural Council. The possibilities of converting and utilising town refuse and sewage are being explored, and citrus growers and farmers are being encouraged to keep more livestock to meet the increasing demand for meat, dairy produce, and organic manure.

PRODUCTION

The following estimates of crops harvested reflect the improvement in 1934 after the two preceding drought years :—

Tons

	1929	1930	1931	1932	1933	1934
Wheat	87,873	87,339	79,650	51,073	44,447	82,855
Barley	46,240	60,071	41,200	24,300	33,926	68,714
Lentils	3,840	3,800	3,758	1,606	1,547	2,251
Kersenneh	7,751	7,612	8,030	2,077	1,892	3,922
Beans	3,977	3,384	3,670	768	655	808
Peas	1,181	1,288	1,064	1,411	3,373	7,125
Dura	31,439	37,058	16,562	15,452	8,860	42,423
Sesame	4,169	2,365	2,024	449	214	2,633
Olives	15,500	2,993	33,906	6,559	3,599	6,647
Melons	16,298	14,840	22,059	32,125	20,434	40,510
Grapes	5,345	5,936	8,295	21,653	12,148	13,184
Tobacco	1,194	953	504	571	402	1,012
Vegetables	15,963	12,865	15,068	24,371	21,305	36,465

It is unfortunate that the olive crop was again poor for the third year in succession, due to hot winds which caused the berries to shrivel.

The cultivation of Turkish tobacco is gradually being limited to the Sub-District of Acre and the hills of Galilee.

POTATO CULTIVATION

The import of potatoes in 1934 was double that of 1929. Imports in 1934 totalled 12,349 tons. All possible efforts are being made by the Government to induce farmers to increase their production of potatoes by the distribution of imported seed at reasonable prices and in some cases free of charge; by the establishment of demonstration plots; and by the distribution of instructional pamphlets. The area under cultivation has consequently increased from about 3,000 dunams in 1930/31 to about 7,000 dunams in 1934/35.

The protective tariff of £P.3 per ton during the period 1st April to the 15th July is a stimulating encouragement to growers to increase areas under potatoes.

In 1934, 56 tons of potato seed were imported by the Department from the United Kingdom and sold to growers at cost price. Such seed was sold to 238 farmers in different parts of the country and in addition, 95 demonstration plots were established to encourage growers to cultivate potatoes. Further, 28 plots were established to demonstrate the increased yields of potatoes from the use of fertilizers.

ANIMAL HUSBANDRY

No outbreaks of serious epizootic diseases occurred during the year.

There was a heavy import of animals for slaughter purposes with the result that quarantine revenue increased from £P.11,800 in the previous year to £P.18,313 in 1934/35.

There was only one sporadic outbreak of Foot-and-Mouth Disease; but tick borne diseases continue to cause serious losses in cattle, sheep and goats, and particularly among imported dairy cattle.

The practice of dipping cattle, sheep and goats is spreading with very satisfactory results. Excellent progress continues to be made in the control and eradication of Bovine Contagious Abortion.

As will be seen from the Chief Veterinary Officer's report attached, it will be necessary to watch closely the incidence of Bovine Tuberculosis and to introduce a scheme for the control of this disease as soon as funds can be made available for this purpose.

The value of vaccination against Anthrax has also been demonstrated. 3,600 animals were tested for Dourine. Over 21,000 dogs, cats and jackals were destroyed in towns and villages to control Rabies.

256,360 animals, excluding poultry, were imported through the Haifa Quarantine Station as compared with 171,085 in the preceding year. 220,428 of this number were sheep and goats, 17,910 were cattle for slaughter, and 595 were dairy cattle. Most of the slaughter cattle were imported from Bulgaria and Roumania; the dairy cattle were imported mostly from Germany; and most of the sheep and goats from Turkey.

Meat inspection is now conducted in 33 slaughter houses throughout the country.

That there is ample scope for the development of the animal husbandry industry is demonstrated by the fact that to meet the demands of the growing population, imports of livestock and livestock produce increased in value from £P.543,000 in 1933 to £P.918,000 in 1934. The imports of butter also continue to increase.

The efforts made by the Government to improve the breeds of cattle, sheep, goats and poultry, etc. are fully described in the Chief Veterinary Officer's report.

Despite the increased production of poultry and eggs, imports of poultry increased to 1,032,000 with a value of £P.103,000 and of eggs to 57,000,000 with a value of £P.105,633 to meet the increased demands of the population.

The third biennial enumeration of livestock was taken in July, 1934, and a comparison of the numbers of livestock in the country in past years is shown in the following table :—

	1930	1932	1934
Horses	13,825	14,100	16,355
Mules	5,304	5,599	7,481
Donkeys	76,858	74,177	75,784
Camels	25,341	32,317	32,033
Cattle	146,397	159,599	130,804
Buffaloes	5,247	7,402	4,540
Sheep	252,773	247,669	188,267
Goats	440,132	380,608	380,511
Poultry	1,161,576	1,172,047	1,510,518

SECTION II.

WORK OF THE DEPARTMENT.

AGRICULTURAL STATIONS

The total area under cultivation at the main Agricultural Station at Acre was 1,431 dunams in addition to the hay field of 280 dunams.

Particulars of the work in progress at this and the other Agricultural Stations are given in detail in the report of the Chief Agricultural Officer which is attached hereto.

The Majdal Station is devoted almost entirely to the production of selected seed grain for distribution to farmers in the Southern District.

The Agricultural Section of the Station at Farradiya was increased from 150 to 200 dunams, for the production of improved grain for distribution to surrounding villages.

Work at the Jericho Agricultural Station is confined to the raising of vegetable and forage crops, and particular attention is paid to the determination of the earliest and latest dates of sowing.

AGRICULTURAL EDUCATION.

DEMONSTRATION PLOTS

The number of demonstration plots was again increased as will be seen from the following table :—

	1931/32	1932/33	1933/34	1934/35
Village Demonstration Plots (75 dunams)	23	34	53	33
Village Demonstration Plots (12 dunams)	—	—	—	20
Seed Plots	126	199	314	627
Potato Plots	31	43	58	95
Oat & Vetch Plots	—	18	108	334
Maize Plots (Silage)	—	—	429	441
Maize Plots (Seed)	—	9	34	445

Twenty 12-dunam plots were established in villages where the local village schoolmaster had undergone a course of training at the Kadoorie Agricultural School, Tulkarm. Apart from the facilities for agricultural training at the two Government Kadoorie Agricultural Schools at Tulkarm and Mount Tabor, some 30 to 40 students complete a course of training annually at the Mikveh Israel Agricultural School near Jaffa. In addition, the teaching of agriculture plays a very important part in the Children's Farm at Ben Shemen, and at the Orphanage at Meir Shfeya, while there is also a well organised Agricultural School for Girls at Nahalal. Agricultural Schools are also being maintained at Beit Jamal by the Salesian Fathers, and at Rafaat under the auspices of the Latin Patriarchate.

HORTICULTURE

DEMONSTRATION PLOTS

Four new variety plots were planted out in the Sub-Districts of Jenin, Nazareth, Nablus and Hebron, to encourage the introduction of new kinds and varieties of fruit-trees, and to serve as centres for the distribution of bud-wood to the surrounding villages.

Experimental demonstration work was continued in the rejuvenation and top working of unproductive olive trees, in demonstrating the use of the olive comb for picking olives, in the control of citrus thrips and red spider, and in the sanitation of citrus groves.

Citrus growers were induced to spray 130,000 trees to control Red, Mussel and Black Scale, under occasional Government supervision, in addition to 17,000 trees which were sprayed under continuous Government control, in order to ascertain the most effective methods and times of spraying.

CITRUS DEMONSTRATION STATION, SARAFAND

All the buildings were completed, the well sunk, the irrigation layout installed, and the grove planted in March—April, 1935.

Cape Gooseberries and other fruits were also introduced at this Station for demonstration purposes.

ACRE HORTICULTURAL STATION

The area was enlarged by 40 dunams as a nursery for the raising of fruit trees and vines for distribution to growers.

There were distributed from this Station in 1934/35 the following vines and fruit-trees :—

	Sales	Free Issues
Grafted vines	14,680	51,542
Citrus Seedlings	10,738	25,147
Budded Citrus	—	325
Budded Deciduous Fruit Trees	3,196	5,241

JERICHO HORTICULTURAL STATION

New varieties of vines, bananas, dates, papaws and loquats were planted and the following seedlings and plants were issued to growers during the year :

Papaws	500
Pomegranates	700
Loquat Seedlings	400
Budded Mulberries	60

The distance of planting, irrigation and stock experiments were continued; and the collection of citrus trees has been increased to 629 trees of 43 different varieties.

JERUSALEM HORTICULTURAL STATION

7,000 budded fruit trees, 8,000 grafted vines and 130,000 seeds of bitter almonds, 50,000 seeds of apricots and 14,500 seeds of peach were distributed to farmers in addition to 19,000 buds of selected plum, apricot, and peach trees.

BEISAN HORTICULTURAL STATION

The testing of various early varieties of grapes and different stocks is being continued.

FARWANEH HORTICULTURAL STATION

This new station was established in 1934/35 and was planted out to grapefruit, oranges, early varieties of table grapes, dates, pomegranates, olives and bananas.

FARADIYA HORTICULTURAL STATION

About 55,000 grafted vines and 1,100 budded deciduous fruit trees were issued in 1934-35. There are about 10,000 seedlings at present being raised in the nurseries. There should be some 4,000 budded trees and 3,500 grafted vines ready for distribution in 1935/36 planting season.

NABLUS HORTICULTURAL STATION

Large numbers of various varieties of olives, almonds, apricots, plums, peaches, pears and hazelnuts have been planted.

2,360 budded deciduous fruit trees and 4,000 grafted vines were issued in 1934/35. There are about 18,000 seedlings at present being raised in the nurseries of which about 5,000 are olives. There should be some 8,000 budded trees ready for distribution in 1935/36.

MAJDAL HORTICULTURAL STATION

An additional area was planted out to vines, citrus, loquats, persimmons and mangoes.

The object of the 6-dunam citrus plantation is to observe the effect of water which has a high chlorine content — 350 per million — on citrus trees in this area.

AFFORESTATION

Six new reserves were proclaimed during the year, bringing the total number of reserves to 238, covering a total area of 699,708 dunams or 270 square miles.

It is becoming increasingly clear that the procedure formulated in 1926 with regard to ownership of forests, will require revision owing to the advancement of claims to forest lands. It is believed that many of these claims are due to the enormous rise in land values including claimants to assert rights to lands (which have no use except for forest or rough pasturage) in the hope that such lands might be sold with substantial profit.

The progress made in the demarcation and survey of forest lands is fully described in the report of the Conservator of Forests attached hereto.

2,203 persons were prosecuted for various offences; of that number 1,953 persons were convicted and were fined in a total of £P.1,038.

14 Nurseries were maintained and 1,406,190 plants were raised. The average cost of production for all kinds of trees amounted to £P.1.053 mils per thousand as compared with £P.1.648 mils per thousand in the previous year.

1,081,914 trees were planted and 2,880 kgms. of seed were sown at 31 Government plantations. 2,910 additional dunams were planted and 3,395 dunams were replanted. In addition, 100 areas covering 2,218 dunams were afforested by private agencies.

New provision was made for roadside planting in co-operation with land-owners on their sites adjoining main roads.

The Forest Service has given special attention to the production of carob trees in view of the fact that the carob bean can be utilised as a supplementary food for animals and for distillation of alcohol. The tree itself is also useful for afforestation purposes, and is attractive from an æsthetic point of view. Nurseries have consequently been organised to raise 100,000 budded carob trees in the next three years.

SERVICES OF THE DEPARTMENT

GRAIN AND VEGETABLES

113 tons of selected seed of wheat, barley, oats, maize and legumes were issued to farmers from Agricultural Stations as compared with 46 tons in the previous year. In addition, 33 tons of selected seed were issued to farmers for sowing demonstration plots in co-operation with the Department.

At the three main Agricultural Stations, Acre, Majdal and Jericho, areas were devoted to the production of vegetable seeds and seedlings and to the acclimatisation of imported varieties. 500,000 seedlings and 200 kilograms of seed of various kinds of vegetables were distributed from these stations to market gardeners and village schools. There was a marked improvement in both the quality and variety of vegetables on the markets. The coarse Baladi vegetables are rapidly being substituted by improved imported varieties.

Vegetable production has trebled since 1930, namely, from some 12,000 tons in 1930 to 36,000 tons in 1934.

Three varieties of Asparagus and an imported type of Jerusalem Artichoke were introduced from the United States; and the cultivation of mushrooms from English spawn was initiated with successful results.

POULTRY, EGGS AND BEE-HIVES.

39,000 hatching eggs and 7,150 breeding fowls were sold to villagers during the year. To assist bee-keepers, Government for the second year in succession, purchased 157 tons of sugar for sale to bee-keepers at cost price free of duty; and 1,300 bee-hives were purchased by Government for issue to over 200 bee-keepers as loans.

FRUIT INSPECTION

The total exports in the 1934/35 season amounted to 7,330,846 boxes consisting of 6,507,995 boxes of oranges, 791,661 boxes of grapefruit, 30,058 boxes of lemons and 1,132 boxes of other kinds of citrus fruits.

The comparable figures during 1933/34 season were 5,526,097 boxes, made up of 5,097,352 oranges, 408,184 grapefruit, 19,798 lemons and 763 other citrus.

Prices were low, the average prices being 9/6 per box for oranges and 11/6 per box for grapefruit, as compared with 11/- per box and 14/6 per box for oranges and grapefruit respectively in the previous year. This was due to the fact that the fruit arrived in overseas markets with a high percentage of waste owing to abnormally unfavourable weather conditions during the picking season when heavy rains caused deterioration. Were it not for intensive advertising, it is possible that prices would have been even lower.

Inspection of fruit prior to export was carried out at the ports of Jaffa and Haifa and at the principal railway stations.

124,385 boxes were rejected for repacking or as unfit for export. Red Scale was responsible for 24,263 of the rejected boxes. The question of combating this scale either by spraying or fumigation is receiving the close attention of the Department in co-operation with the Experimental Station of the Jewish Agency at Rehovoth.

METEOROLOGICAL

Meteorological records are maintained at 10 official Agricultural Stations, while rainfall records are kept at 51 private stations in addition to the official stations. The value of these records accumulates as the years go by, and it is worthy of note that the rainfall record of the Jerusalem Station now dates back to 87 years, that of Mikveh Israel to 38 years, and that of Tiberias to 31 years.

RESEARCH AND INVESTIGATIONS.

FIELD EXPERIMENTS

Research work in the strict sense of the term is not being carried out at Agricultural Stations. Operations are of a practical nature confined to the introduction and testing of new crops, the acclimatisation and breeding of cereals, legumes, vegetables, forage crops, and grasses. For example, in 1934 there were under trial 27 varieties of wheat, 23 of barley, 13 of oats, 15 of maize, 4 of vetch and 7 of beans. There were 108 varieties of forage crops and grasses under trial. In the vegetable section, there were 40 varieties of tomatoes, 24 varieties of potatoes, and over 150 varieties of other kinds of vegetables under trial.

ERADICATION OF PESTS AND DISEASES

El Doodeh (*Scythris temperatella*). Farmers were advised to combat this pest by a change of rotation.

Field Mice. The cycles of their appearance is being studied by Dr. Bodenheimer of the Hebrew University. There were small outbreaks of field mice in the winter of 1934 which were rapidly exterminated by the use of gassing machines and poisoned grain.

Smut. Farmers were advised to disinfect their seed with copper sulphate and copper carbonate. The value of such treatment was demonstrated in co-operative demonstration plots. Sufficient seed was treated by the Department to sow 4,000 dunams of wheat in ten villages.

Ziwan (*Lolium temulentum*) and Taradan (*Cephalaria Syriaca*). Endeavours to eliminate these two pests from grain by the use of portable grading machines were continued with success.

Farmers are most anxious to use these machines. Actually 517 farmers in 29 villages used them, treating a total of 783 tons of grain; but they show no disposition to purchase machines for their own use.

CITRUS

During the export season of 1934/35, a Colonial Agricultural Scholar, Mr. K.G. Argles was sent to Palestine to study Fruit Inspection and Horticulture generally. As a result of his studies, the Fruit Inspection Service despatched 250 boxes of fruit to ten consignees in the United Kingdom in standard boxes. The reports were unanimous as to the desirability of adopting a box of one standard size, but all consignees were opposed to the particular size of the box despatched, as it was too unwieldy, and too heavy for one person to handle conveniently. It was also too long to enable stacking more than two boxes high, and involved extra porterage charges owing to the increased weight. Nevertheless, trial shipments of a medium and possibly a small size box will be undertaken next season, in the hope of introducing a standard box for all counts which will be acceptable to the trade.

Experiments were continued in the keeping qualities of oranges, which are described in the report of the Chief Horticultural Officer.

FORESTRY

64 specimens and 26 species of desert plants were collected in the country south of the Dead Sea.

NURSERY INVESTIGATIONS

It has been demonstrated that *Pinus halepensis* can be raised in nursery beds as a seedling or transplant with very little water beyond that provided by the rainfall. Thus it may be possible to raise this species in flying nurseries at planting sites with little expenditure on water and transport.

TRANSPLANTING OF OLD OLIVE TREES

It has been shown that old olive trees varying in age from 20 to perhaps 150 years can be safely transplanted. Such trees transplanted two years ago are now observed to be fruiting.

FOWL POX

A subsidy of £P.150 was granted to the Hebrew University to study the possibility of increasing the period of immunity conferred by vaccination of poultry against Fowl Pox.

VETERINARY RESEARCH

Reference should be made to the detailed report of the Veterinary Pathologist annexed hereto.

LIBRARY AND PUBLICATIONS

There are now 4,325 pamphlets, 487 books, and a large number of catalogues of agricultural machinery, seeds, livestock and fertilizers in the library. In addition, 244 periodicals and reports are received from all parts of the world, mostly free of charge in exchange for reports and leaflets issued by this Department. The following leaflets and notices were prepared for issue to farmers during the year, in Arabic, Hebrew and English:—

1. The Control of Insect Pests.
2. Seed and Seed Testing for Farmers.
3. Manures and Manuring.
4. Maize Cultivation.

5. Silos and Silage.
6. Feeding of Poultry.
7. The Carob Tree and its Cultivation in Palestine.
8. The Citrus Industry in Palestine.
9. Plum Growing in Palestine.
10. Olive Growing in Palestine.
11. Avocado Growing in Palestine.

SECTION III

FINANCE.

The revenue of the Department increased from £P.4,226 in 1921 to £P.51,364 in 1934/35. Expenditure in 1931 was £P.40,678. In 1934/35 it was £P.147,368. Details of expenditure and revenue for the current year are shown below:—

EXPENDITURE	£P.
Administration, Clerical, Accounts and Stores	7,693
Veterinary including Quarantine, Hospital, Contagious Diseases and Laboratory Services and attendance on Police animals	20,564
Agricultural Field Service, including Experiments and Demonstrations	17,807
Forestry	17,688
Horticulture, Citrus Research and Fruit Inspection	24,202
Advertising of Citrus Fruits	12,655
Animal Husbandry	14,134
Entomological, including Fumigation and Plant Inspection at Ports of Entry.	16,151
Kadoorie Agricultural Schools at Mount Tabor and Tulkarm	12,800
Meteorological Service	381
Fisheries Service	1,285
Upkeep of Government House Grounds	919
Sericulture	1,089
TOTAL	£P.147,368

REVENUE	
Animal Quarantine Fees	16,461
Forestry Receipts	4,630
Fruit Inspection Fees	10,410
Citrus Advertising Fees	12,655
Sale of Agricultural and Horticultural Produce	789
Stock Farm Receipts	1,852
Plant Fumigation Fees	1,249
Kadoorie Agricultural Schools	3,316
TOTAL	£P.51,362

SECTION IV

GENERAL AGRICULTURAL COUNCIL.

The General Agricultural Council with its nine Committees for Agricultural Economics and Marketing, Agricultural Chemistry, Horticulture, Citrus Fruits, Plant Protection, Irrigation, Agricultural Education, Animal Husbandry, and Agronomy, with a total membership of 144 continued to give useful advice to Government. Recommendations were submitted to Government on various matters connected with the trade in and customs duties on agricultural produce; the citrus industry; animal husbandry; agricultural education; and legislation. Special Committees were set up on the advice of the Council to study and report to Government on the improvement of the olive oil industry; the transportation and marketing of citrus fruits; and proposals for increasing the supply of manure.

As a result of the Council's investigation and recommendations, the customs duties on potatoes were increased from £P.1 to £P.3 during the main local harvest season, i.e. 1st April to 15th July, with encouraging results in increasing the area under production.

Other matters dealt with by the Council and Committees were :—

(a) Trade Delegations to Egypt and Europe; possibilities of introducing a Clearing House; and application of the Most Favoured Nation Clause to Palestine.

(b) Enquiry into the Future of the Nablus Soap Industry.

(c) Examination of proposals to increase the customs duties on Onions and Butter and Milk-cream.

(d) Abolition of customs duties on Meat and Fish Meals used as poultry feed.

(e) Restricting the export trade in Malting Barley.

(f) Inspection of citrus fruit exported from Palestine.

(g) Tuberculosis in cattle; poultry diseases specialists; and measures to increase the production of honey.

(h) Legislation for the control of nurseries, and in connection with the Rural Property Tax Ordinance.

(i) Agricultural Education.

I desire once more to place on record my grateful thanks to the staff of the Department for the loyal support and assistance they have rendered, and also to the Members of the General Agricultural Council and the Committees thereof, for their valued co-operation and advice.

M. T. DAWE

Director of Agriculture and Forests.

REPORT ON THE AGRICULTURAL SERVICE

FOR THE YEAR ENDING MARCH 1935.

CONTENTS:

I. General

II. Issues of Selected Seed from Agricultural Stations.

III. Services to the Public.

IV. Eradication of Peststt and Diseases.

V. Agricultural Activities.

VI. Production — General.

VII. Agricultural Education.

VIII. Agricultural Stations.

IX. Potato Industry.

X. Meteorological Review.

CHIEF AGRICULTURAL OFFICER'S REPORT

GENERAL

The season under review from April 1st, 1934, to the 31st of March, 1935, saw a very real advance in all the branches of agricultural work undertaken by the Service. It can be attributed to beneficial winter and spring rains, equable climatic conditions in the summer of 1934 and a happy cooperation between farmers and the field staff of the Service.

Progressive constructive work of an educational nature during the past three years had been severely handicapped by conditions over which the Agricultural Service had no control — the climate.

The very fine rains of the past winter, notwithstanding the devastating floods in parts of the country, have made the rural population sanguine that the chain of bad seasons has at last broken.

The periodic havoc caused in the farming areas of Palestine by endemic diseases of plants, locust invasions and the depredations of field mice, so usual a feature of an agricultural season, is happily not reported during the period to which this report refers. A recurrence of drought in the localized areas did, however, inflict some hardships on the fellaheen of the Jordan Valley.

2. During the first four months of 1934, following a very dry December, climatic conditions, more especially in the Northern areas, were such as to cause great anxiety to farmers. February was distinguished as one of the severest winter months for some years.

Rains were heavier and more continuous in the northern areas than in the South of Palestine, but comparatively speaking the distribution was quite favourable.

In the plains and foothills of the southern districts, the outlook for a good harvest was exceptionally bright. Occasional showers during March negatived the ill effects of drying winds.

In the Beersheba Sub-District, prospects for a good yield of cereals, the first for many years, were evident. Good falls amounting to 195 millimeters in January, 72 millimeters in February and 12 millimeters in March put the issue of the harvest beyond doubt.

With the exception of the sandy areas where crops had been covered by drift good yields of grain and straw, with a fine sample of seed were reaped.

Prices however, in the early part of the year, dropped to an abnormally low level.

3. At the end of March it was difficult to forecast the prospects for cereal crops in both the hills and plains in the central and northern districts. Large areas of late sown cereals were very backward.

Generally speaking, however, both early and late sown wheat crops were holding their own against the hot and dry conditions, except in the Ghor of Nablus, Tiberais, and Beisan where crops were suffering, and looked like becoming a total failure should rain not fall during the first half of April.

4. Improved climatic conditions in early April had a beneficial effect. Cool weather and heavy dew falls merging into thundery conditions culminated in a more or less general though light fall of rain. Unfortunately the depression did not reach the more easterly areas where it was most urgently needed. A total failure was recorded in the unirrigated areas of the Ghor, and the rain was too late to be of very great benefit to wheat crops in the northern areas.

The barley crops however, were generally good and well above the average in the southern districts.

5. A wide spread attack of "el doodeh" (*Scythris temperatella*) covering an area of approximately 40,000 dunams was again seen in both Southern and Northern districts.

The damage done by the pest was very considerable to late sown crops, more especially on the calcareous soils of the Nablus and Jenin areas. Early sown cereals which were forward, recovered.

6. After a season which had shown the greatest varieties as regards climatic conditions the final result of the harvest, though good in the South, could only be classed as poor in the North. Failures were confined to the eastern slopes and unirrigated plains of the Jordan valley and South eastern Beersheba. The yields of leguminous crops on the other hand had not been so heavy for some years. The grain sample of all crops was of a very high standard.

7. The inclement weather conditions of March had adversely affected the natural grazing. Grasses ran into flower quickly and in the easterly areas were dead at the beginning of April. Stock were in poor condition.

In order to give farmers every opportunity of taking advantage of the fair prospects showing for a good summer crop, forage loans to an amount of £P.5,500, issued at the discretion of District Commissioners were approved.

8. There was every prospect of a good summer crop over the greater part of the country. The dry conditions obtaining during March enabled farmers to plough very considerable areas. There was an abundance of soil moisture in the fallowed lands.

The showers of spring, prior to the last ploughing, finally assured a good return, at least in the southern and central areas.

9. Most village threshing floors were full to overflowing with cereal and leguminous crops.

The summer crops for the southern areas turned out to be the best seen for many years. Similar results as regards maize, dura and cucurbitaceous crops were recorded from the North, although the seasame return was poor. The rains of April coupled with favourable weather condition in May had caused a very rapid growth of maize, dura and melon crops.

The gradual expansion in the area under maize in the country was noticeable. Over 20 tons of seed had been distributed gratis from the Agricultural Stations. By the end of May, it was no uncommon sight to see unirrigated crops six feet in height.

10. Farmers in the southern and central districts seemed reluctant to sow sesame to the extent the seasonal conditions warranted, and the area under this crop was even less than that of previous years when rather more droughty conditions prevailed.

The field crops of cucurbitaceous fruit and vegetables gave heavy yields. Markets were glutted with very fine samples and prices in consequence were poor, save for very early and late supplies.

11. The results of winter forage demonstration plots were in general very satisfactory. Although some failures were recorded from plots sown with vetch and oat mixture, good yields of hay averaging from $^1/_3$ to $\frac{1}{2}$ ton per dunam or $1\,^1/_3$ to 2 tons to the acre were harvested.

The conservation of fodder is gradually engaging the interest of the more progressive farmers more especially those who are up-grading their working stock.

The gratis issues of maize to farmers was in all instances accompanied by a provision that a proportion of the crop should be set aside as silage.

The field staff were able to have over 400 pits put down with a capacity of from 4 to 7 and in instances 10 tons, although farmers are generally reluctant to adopt this or any other type of fodder conservation. At the date to which this report refers a fair percentage of those pits are as yet unopened.

12. By the end of September the threshing floors were generally clear, and in the southern areas and Galilee where it is the rule rather than the exception afir sowing had commenced.

The picking of the tobacco crop was nearing completion and the olive harvest — a very poor one — had started.

The condition of dry hillside grazing and late stubbles kept draught and domestic stock in fair condition through the Autumn and there did not appear to be any cause for the further issue of forage loans. Tibn was plentiful and comparatively cheap.

Early kids were seen here and there by mid-October and mothers were being hand-fed.

13. Climatic conditions in November were very variable. The S. Westerly gales, which bring with them the first rains, and are the usual feature of the month, were entirely absent. The benefit of local and scattered thunder showers was confined rather to grazing than to crops. A cloud-burst in Tiberias caused a great deal of soil erosion and damaged considerable areas of late vegetables.

Farmers were feverishly pushing on with sowing due to the lateness of the season. It was not until December 6th that a general and soaking rain fell. Subsequent heavy and well distributed showers during the month promised well for a good agricultural year.

The two predominant features throughout the winter were the combination of mild temperatures and continuous and heavy rains of January and February.

Neither in the highlands of Northern Galilee nor on the Judean hills were any traces of snow seen throughout the winter.

14. Natural grazing came along quickly, lambing ewes and kidding goats were never in want of food, and hand feeding, the usual practice during the winter, had to be but seldom resorted to. No losses of stock from starvation were reported.

In the northern areas the initial rains had been comparatively light but were followed by heavy floods in January and February.

Early sown crops showed a good germination but on the plains quickly turned colour; ploughing and sowing was completed towards the end of December.

So impossible was it to cultivate on the northern plains that in those villages, especially in the Acre Sub-District, where it has always been the practice to sow after the rains, only about 10% of land annually put under winter crops was able to be sown.

Fears were entertained for the ultimate fate of early sown crops on the plain, as large areas by mid-January had been entirely inundated.

15. The distribution of the rains throughout the three months was not very conducive to either forward growth or easy cultivation, but only in the plains were operations to any great extent hindered. In the southern areas conditions were better than in the sub-districts of the North. The far South had not been neglected as regards rain. The natural grasses throughout the country were in places higher than sown crops, The Bedouin of the Ghor could never remember such a fine stand of natural pastures.

Two large inland plains, the Battouf on the borders of Nazareth and Acre sub-districts, and the Sanour Plain of the Jenin sub-district were under water. In the latter locality 2000 dunams of sown cereals had been destroyed and there was little likelihood that flood waters would subside to permit of the sowing of summer crops.

In the Samaria District torrential rain fell on the night of February 3rd. Nearly six inches of rain were registered in Nablus in twelve hours.

All principal wadis between the hills, bare of any forest growth, quickly became raging torrents.

Very serious damage was caused to the agricultural lands and crops more particularly the former as the whole of the surface soil was washed away and masses of boulders left.

In the Ghor el Fara the irrigation system was destroyed and many crops and plantations washed away.

It is estimated that in the Nablus sub-district the losses of 5600 dunams of winter crop, 52,000 fruit trees and 350 dunams of vegetables would not be covered by £P.11,000.

In the Tulkarm area toward which the waters form the Nablus hills rushed, damage was also heavy.

At least 5,000 dunams of winter crops, and 6,000 trees, a fair percentage of which were citrus and olive, were destroyed to a value of £P.10,000.

16. Sanguine of a good season, farmers were continuing to plough and sow when and wherever possible well into February; so that a greatly increased aera is under both cereal and leguminous crops.

The mild wet conditions promoted fast growth in hills and foothills of the central and southern districts. Not since the Occupation had such a good stand of cereal and leguminous crops been seen.

The wintry conditions of February gave place to a fine warm spell in March, which eventually ran on into summer, no further general rains falling.

The water-logged areas in the Northern District quickly dried up, crops which had been suffering from continual flooding revived and farmers immediately commenced turning over every available dunam for spring and summer crops.

Ploughing was difficult, owing to the abundant growth of vegetation. Springs which had been dry for some years, were putting out a heavy flow.

17. The note-worthy feature of March was the extremely low rainfall — almost the lowest recorded.

As late as the 15th of the month there was every hope of an unusually good harvest throughout the Beersheba area. Continued lack of rain coupled with drying winds badly affected the crops in the south, south-western and eastern parts of the district and it was evident that the only yield would be a supply of dead straw. Even this is pulled by the nomadic tribes and crushed for tibn, a most valuable commodity, in this the most drought stricken part of Palestine.

As at the end of March, with the exception of parts of Beersheba and Gaza areas and such parts of the country where destruction by floods had been so great, there was every prospect for a good harvest of winter crops.

18. The uncertainty of success in many areas of the Southern District to obtain fair yields of crops grown under rain, and the disappointing results in the recent preceding years of drought, has led agriculturists to search intensively for hidden water resources. Apart from the new areas planted to citrus, vegetable and fodder growing under irrigation is becoming an important feature in many villages. The local urban markets are absorbing all the quantities of vegetables, poultry and dairy produce at good prices and the demand by far exceeds the supply.

With the sinking of many more new wells in the coastal area and the internal plains, the intensification of agriculture is therefore being continued with even more energy than in 1933.

In the central plains, water is being tapped at comparatively greater depths, than have been thought of hitherto. The establishment of contracting firms with special deep boring machinery, has given decided assistance in this direction.

The problem of intensification of agriculture has become closely dependant on the finding of water for irrigation. A systematic survey of the water resources of the country has thus become imperative.

In the coastal area and internal plains of Gaza—Majdal, the composition of water varies very much in regard to its salinity. While in some places the high content of sodium and magnesium chlorides found in the water is a serious deterrent to citrus growing, it is possible that certain vegetables and other crops may be grown profitably.

SERVICES TO THE PUBLIC.

19. There has been considerable expansion in the many undertakings in hand by the Agricultural Service. Demonstration work, in co-operation with the Department of Education, has been extended by the establishment of twenty co-operative plots in villages where trained schoolmasters are stationed. Seed, fertilizers and implements have been supplied and a three course rotation put into practice.

20. Increased calls made on the Service for the supply of insecticides, fungicides and mechanical apparatus have been met.

A very considerable increase in demonstration plots of all types, in the supply of seed grain, vegetable seed and seedlings, has been effected during the year.

21. The distribution of improved seed to farmers, either by sales or free issues, was continued on a larger scale and the demand by far exceeded the supply.

In places where the advantages of the improved seed have been fully realized by farmers, the gratis issue has been lessened, while sales have been increased. As far as was possible issues have been made to farmers other than those who had been given supplies in previous years.

In all cases, Agricultural Inspectors have kept in constant touch with recipients of government grown seed and obtained information as to the disposal of the yields. In many instances growers of improved seed, after storing the quantities required by them for their sowing, disposed of the balance by sale or exchange with other farmers of their own or neighbouring villages. This seed has always secured a price at least 10% higher than the ordinary commercial seed.

The shortage of supply over demand for selected grain and fruit trees from Agricultural and Horticultural Stations, made the need for the establishment of a station in the Judean hills apparent. A suitable area of land situated midway between Jerusalem and Hebron in the vicinity of Ain Aroub has been expropriated under purchase. It is expected that the Services concerned will be able to commence work during the coming autumn.

22. The most important work of improving natural pastures, commenced in the winter of 1933, has been continued.

The unfortunate spell of dry hot weather experienced during March of 1934, effectively demonstrated the difficulty of establishing the better known grasses, both English and Australian, on hillsides. Very few of those grasses, enumerated in another section of the report, survived.

Great difficulty was experienced in inducing villagers to cooperate in a system of rotational grazing. However, prior to the onset of winter, areas, in the vicinity of fifteen thousand dunams in seven villages in southern Palestine, had been secured for the purpose. Flocks were kept from grazing on the areas by guards.

A further trial of imported grasses was undertaken. Varieties considered suitable were sown on hillside areas and due to the better weather conditions in spring, results, in instances, were rather more successful. It seems to be evident that a concentration on leguminous plants will give better and more permanent results than with grasses.

Further planting of seedlings of atriplex varieties from seed grown in nurseries have been made and at the close of spring of the year there appeared every chance that the effort would meet with success.

23. During the year one of the senior Agricultural Inspectors was detailed for a tour of instructional duty with Dr. I. Reichert of the Rehovoth Research Station. The work of this officer, both in the laboratory and field, has been of the greatest benefit while acting as a liaison between farmers and the experimental station, and in conducting demonstrational work in villages. The officer will remain at Rehovoth for another year's instructional duty.

ISSUES OF SELECTED SEED FROM AGRICULTURAL STATIONS.

24. A generally good harvest at all stations produced a comparatively heavy supply of grain available for distribution to the public.

The increasing popularity of the seed from Government stations is responsible for an annual shortage of supply of the demand.

For some years it has been evident that soft grained Australian wheats have given extraordinary good results when sown under irrigation in the warmer parts of the country.

Notwithstanding the greatly increased yield over local wheats, farmers, after one season's trial, will not accept seed, even gratis, as they are unable to sell the produce from small areas.

When taking into consideration the fact that millers annually import white flour in the vicinity of 24,000 tons for blending purposes it is rather unfortunate that, as soft grained milling wheats of good quality will grow so well, farmers, will not cultivate them more extensively.

The following table will show the quantities of seed issued from Government Stations during the past three years and the quantity expected to be realised from the 1935 harvest :—

Crop	1932		1933		1934		Expected yield in 1935
	Tons	Value £P.	Tons	Value £P.	Tons	Value £P.	Tons
Wheat	11 1/2	126	10 1/2	106	37 1/2	375	50 1/2
Barley	16 3/4	110	15 3/4	126	33 1/4	366	39
Oats	5	40	4	32	5 1/2	44	10
Maize	2 1/2	20	3 1/2	28	25	200	47 1/2
Legumes	3	24	13	104	13	104	27

In all 1380 farmers throughout the country have sown selected seed which can only have a very beneficial effect on yield in this and subsequent years.

Additional to the above, 8½ tons of cereals, 5 tons of leguminous seed and 20 tons of maize have been issued to cooperating farmers for sowing demonstration plots.

ERADICATION OF PESTS AND DISEASES.

25. *El-Doodeh* (*Scythris temperatella*) :— In March of the year at least 40,000 dunams were affected by this pest. From the widespread attack in the winter of 1934 and the ensuing spring, it was obvious that measures would have to be taken to bring farmers to realize that the control lay in their own hands.

It was suggested that regulations under the Plant Protection Ordinance might have to be brought into use, but after the poor seasons experienced during the recent years, it would have been rather severe a tax to put on farmers already overburdened with debts.

A simple worded pamphlet calling on farmers to combat the pest by means within their power — summer cultivation of lands, careful winter cultivation and a change of rotation — was given wide distribution.

Thirty-five demonstration plots of an area of 21 dunams each were established in areas most frequently attacked, on which a varied rotation is being practised.

Eleven additional plots were very heavily dressed with Nitro-chalk or Sulphate of Ammonia, or N.P.K. with Nitro-chalk to serve a dual purpose of demonstrating the effect of fertilizer on crops and at the same time whether they would have any effect on the pest.

Again in the winter of 1934-35 and the present spring, areas in the Samaria District were attacked, and although the season was such as to enable affected crops to recover quickly, it is very evident that continued and extensive measures are imperative if this menace is to be eradicated.

Owing to the seriousness and wide distribution of the pest and the unwillingness of farmers to combat, recourse to action under the Plant Protection Ordinance may be inevitable.

26. *Field Mice* :— A field mouse plague is an ever present source of danger to cereals and leguminous crops. The cycle of their appearance in large numbers is the subject of a study by Dr. Bodenheimer of the Hebrew University in cooperation with the field staff of the Agricultural Service.

Not since 1932 have they appeared in sufficient quantities to constitute a plague but annually light attacks are reported. Young cereals and berseem are the favourite crops of attack, and if by late spring the mice are present in great numbers, ripe crops suffer to an alarming extent.

In November and December of 1934, outbreaks were reported in the Plain of Esdraelon and lower Galilee.

A prompt attack with gassing machines and distribution of all available supplies of poison grain on hand, coupled with the heavy falls of rain, exterminated the pest.

27. *Fungus Disease Control (Smut)* :— Although in some instances more progressive farmers were in the habit of dressing their seed with Copper Sulphate, the prevalence of fungus diseases in dura and winter crops, never thoroughly controlled by farmers, gave cause for alarm. The dura crops in the Samaria and Galilee Districts were the most heavily attacked by both closed and loose smut.

Cooperative demonstration plots had been established under control of the Sub-District Inspector detailed for work with Dr. I. Reichert of the Rehovoth Experimental Station, and all seed grain was treated prior to issue, with either a proprietary remedy Ceresan or with Flowers of Sulphur.

Results were very successful. These demonstration plots are being again established this season in villages other than those dealt with last year, and in addition to the two fungicides named above, Copper Sulphate and Copper Carbonate are being used.

Similar work has been done with wheat smut. It is rather discouraging to note that the majority of farmers, while appreciating the measures of control, depend largely on free issues from the Department rather than buying for themselves. Sufficient seed was treated by the Agricultural Service to sow 4,000 dunams of wheat in ten villages.

Specimens of plants found by Agricultural Inspectors to be diseased are collected and forwarded to the Pathological Section at Rehovoth and to the Departmental Entomologist for identification, and advice as to control methods is given to farmers or market gardeners and where possible insecticides and fungicides are issued gratis and the necessary apparatus loaned.

A total amount of 75 kilogrammes of Ceresan were purchased by the Agricultural Service and distributed to farmers. Treatment prior to planting was carried out under the supervision of the Inspector for the District.

28. *Elimination of Noxious Weeds* :— There has been no cessation in the endeavour to eliminate the two serious pests Ziwan (Lolium temulentum) and Taradan (Cephalaria syriaca) from farmers' crops. The number of portable cleaning and grading machines was increased and a further seven are on order for use during the coming harvest.

There is an insistant demand for these machines on loan but farmers will not purchase them. During the year, 517 farmers in 29 villages availed themselves of the machines and in all 783 tons of grain were treated.

29. *Improvement of Vegetable Crops* :—The local variety of vegetable still retains its popularity among the Arab purchasers. There is, however, a decided increase in the activities of the small holders to extend, not only the area at his disposal, but to purchase seed of imported varieties. The citrus grower now cultivates vegetables in his young groves, and cooperative groups are extensively cultivating nothing else owing to the very heavy demand from the large towns.

The assistance given to market gardeners by the Department is considerable. Varieities are tested out at Agricultural Stations for time of ripening, drought resistance, and reliability; and fair supplies of graded seed are distributed to gardeners. Additionally, the practice of raising seedlings for gratis distribution to farmers and schools has been considerably extended. During the year, large quantities of seed and seedlings have been distributed.

It is worthy of note that the large "baladi" tomato and the poor type of garden pea are gradually going out of cultivation and even in the smallest of retail shops, imported varieties are seen offered for sale. Among tomato varieties, Princess of Wales, La Marmande, Best of All, Every Day, are most favoured, and the Abundance and Telephone varieties of garden pea command high prices with retailers.

AGRICULTURAL ACTIVITIES.

30. *Agricultural Machinery* :— In Jewish settlements where agriculture continues to progress on modern lines, the use of modern machinery is employed. Several combined harvesters have been imported and are giving satisfactory service. Tractors, seed and fertilizer drills, modern dairy appliances are all part of the equipment of a settlement.

It is worthy of record that during the year in the Jenin Sub-District, the Agricultural Committee of Yamoun and a family in Beit Kad village cooperatively purchased two International tractors. Every assistance was given by the Agents who trained, free of charge, young men from the respective villages in the use of the machines. In the Jaffa-Ramleh area, the more wealthy and progressive landowners are gradually adopting the use of modern implements. A decided increase in the use of light steel ploughs is noted among Arab farmers.

The use of light reapers is also becoming more general.

Imports of Machinery :—

Imports	1931 £P.	1934 £P.
Dairy Appliances	1,209	6,370
Incubators Brooders	2,167	2,391
Beehives	228	303
Other Machinery & Tractors	11,186	56,632
Reapers & Threshers	79	
Agricultural Tools	—	11,771
Total	14,869	77,467

31. *Manures and Fertilisers* :— A shortage of organic manure, usually the result of the replacement of animal draught by mechanical power, is due to the heavy demand of the citrus growers. The country in this respect is by no means unique. Imports from neighbouring countries amounting to 2,387 tons have been necessary in the past season to meet demands.

It will be argued that green manuring should be resorted to. This is done while trees are small. In the meantime there have been some requests from farmers requesting Government to legislate against the continual collection and sale of organic manure by Bedouins and others.

Commercial utilization of city refuse and sludge, the realization by citrus growers that smaller quantities of animal manure added to trash as a compost, and the raising of livestock on a portion of their holdings, however valuable the land, would ease the shortage.

A special committee of the General Agricultural Council has been appointed to enquire into this matter.

The use of chemical fertilisers by the Arab farmer is not by any means general. There is, however, a decided increase in the use of phosphatic and nitrogenous fertilisers, mainly due to the cooperation of the Service with the importing firms in establishing practical field tests.

Import of Fertilisers :—

Year	Tons	Value £P.
1931	4,463	38,858
1932	7,489	50,211
1933	10,324	94,170
	2,257	6,147 Organic.
1934	12,853	104,724
	2,387	4,484 Organic.

32. *Prices of Crops* :— Though prices of cereals were on the whole lower than in 1933, due to the good season, a comparatively high level was maintained.

Wheat, which was changing hands at from £P.9.500 mils to £P.12, during the early months of the year, steadied to £P.8.500 to £P.10 after harvest. The barley fluctuated between £P.5 and £P.6 a ton during the greater part of the season.

The farmers of Beersheba, finding themselves with a good crop, and being forced to sell their barley at a figure considerably lower than the market price, made representations to Government to increase the import duty on this commodity. Barley was changing hands in May at as low a figure as £P.3.250 a ton in the Gaza and Beersheba markets.

The prices for dura dropped to a much lower figure than realized in 1934, never rising above £P.5.500 mils per ton and dropping to £P.3.600 mils. Leguminous seed prices showed a very distinct increase over those in the preceding year.

Kersenneh, beans and lupins rose to £P.10 a ton, vetch to £P.12 and as high as £P.14 and lentils to £P.16 per ton. Tibn prices again showed no standard figure for the country, considerable variation being noted in sub-districts; but on the whole were much lower than in 1934, selling at from 900 mils to £P.3.

Vegetables throughout the year commanded high prices notwithstanding the enormous increase in production of 15,000 tons.

PRODUCTION.

33. *Cereals* :—The failure of the harvest in 1933, coupled with generally poor prospects until December, did not give farmers much encouragement to sow any excessively large area under winter crops.

On the change of the seasonal prospects, cultivators were sowing well on into February to make up for the lost time.

A generally good harvest in the southern areas and fair in the north, resulted in the yield of cereals being almost double that of the previous year.

PRODUCTION (TONS)

	1929	1930	1931	1932	1933	1934
Wheat	87,873	87,339	79,650	51,073	44,447	82,855
Barley	46,240	60,071	41,200	24,200	24,300	33,926

34. *Wheat* :— Not for many years had the crops of the southern areas been better. Exceptions were the eastern parts of the Judean hills and the south-western part of Beersheba. The stand was not very high, but heads were well developed, and the light rain of March and subsequent fall in April, assured a a fine sample of grain.

Particularly pleasing results in the majority of instances were reaped from the 10½ tons of selected seed which had been distributed to farmers throughout the country.

In the northern areas and specially in hill districts, comparatively large areas had been sown late. The poor weather conditions of March in no way helped, and the result was a good deal below the average. A complete failure of winter crops was recorded in the unirrigated areas of the Jordan Valley and the eastern slopes of the Tiberias, Beisan and Nablus Sub-Districts.

35. *Barley* :— The yields of the barley crop showed, in all sub-districts of the Southern District, improvements over the wheat. For the Northern District, however, yields could only be classed as fair and were in general below the normal. Partial failures were recorded in the unirrigated areas and the Ghor and eastern slopes.

In the Southern District, the crop was the heaviest known for many years, if not since the Occupation. The sample was very excellent and the stand high. 15¾ tons of selected seed of various varieties were distributed to farmers, and in all cases, showed a distinct increase over local types.

36. *Leguminous Crops* :— The main leguminous field crop of the country consist of the horse bean, especially grown in the heavy soils of the northern maritime plains; kersenneh (Vicia ervillea) usually confined to the hill areas; lentils with a wide distribution, but more favoured in the plains; the lupin, the cultivation of which is restricted to the citrus groves as a green manure and the sandy areas of the northern plain, and the chick-pea (hummous) grown as a late winter or early spring crop in all districts.

Climatic conditions were especially favourable to growth, and yields for the season were universally good with the exception of the bean crop which was attacked by *Uromyces appendiculatus.*

There was a dearth of leguminous seed in the country at the sowing season and heavy imports came in from Syria. The high prices obtaining had a decided effect on the area sown.

Vetch not widely used as a leguminous crop, is gaining favour. Seed imported was being sold at £P.12 to £P.14 per ton.

PRODUCTION (TONS)

Crop	1930	1931	1932	1933	1934.
Lentils	3800	3758	1606	1547	2251
Kersenneh	7612	8030	2077	1892	3922
Beans	3384	3670	763	655	808
Peas	1288	1064	1411	3373	7125

37. *Summer Crops* :— The heavy and moderately well distributed rains, coupled with the fall in April, gave farmers every hope that summer crops would be good. Generally, but more especially in the southern coastal areas, where early summer sowing is the rule rather than the exception, those hopes were realized.

Both maize and dura crops showed extraordinarily fast growth. It was no uncommon sight to see maize under dry cultivation six feet in height before winter cereal crops had been reaped. Dura crops were fairly good, with the exception of some isolated areas in the foothills of the Hebron sub-district.

Farmers seemed reluctant to put large areas under sesame and it would appear that its cultivation is tending to decrease, though this suggestion is rather disproved in the present season, as exceptionally large areas have been sown with sesame, notwithstanding the failure of the latter rains.

Another outstanding feature of the season was also the large area in the hills and foothills put under vegetable crops. Small hillside terraces on which in normal seasons a dura crop could be grown with difficulty, were giving excellent yields of marrows, cucumbers and tomatoes.

A considerably extended area was sown with water melons in the Tulkarm district. It is estimated that at least 35,000 dunams were under the crop. Yields were good but prices unfortunately just the reverse. The late sown crop in the Acre and Haifa sub-districts was in good condition toward the end of summer and prices by that time had risen giving farmers a remunerative return.

The olive crop for the third year in succession was again very poor. The leaf growth had been remarkably luxuriant. Hot winds at flowering time had a marked effect on the setting of the fruit and subsequent hot winds caused a shrivelling of the fruit.

There was a decided increase in the area under tobacco. Yields in general were not as good as was expected, but in definite areas were heavy.

PRODUCTION OF SUMMER CROPS IN TONS.

Crop	1930	1931	1932	1933	1934
Dura	37058	16562	15452	8860	42423
Seasame	2365	2024	449	214	2633
Olives	2993	33906	6559	3599	6647
Melons	14840	22059	32125	20434	40510
Grapes	5936	8295	21653	1248	13184
Tobacco	953	504	571	402	1012

38. *Maize* :— Annually, very remunerative crops of maize without irrigation are produced from Jewish and German settlements. The Arab cultivators in the swamp area in the region of Lake Huleh produce two crops annually. Every effort is made by the Service to encourage the dry cultivation of the crop by Arab farmers in the northern areas but has met with little success. The change is made by the Agricultural Service to encourage the dry cultivation of the crop from dura to maize as part of their main summer crop by the peasants will necessarily be slow.

For the past two years seed in the vicinity of 20 tons has been distributed to farmers for production of silage, green fodder and grain, but applications for purchase are negligible.

It is evident that south of the Jaffa-Ramleh-Jerusalem road it is not advisable to plant extensive maize without irrigation, and maize can never replace the summer dura crop in the southern area.

Trials under the best conditions of cultivation on the Majdal Station have proved abortive.

At Acre Experimental Station, however, very valuable data have been obtained from varietal, fertilizer, and time of planting tests.

Earlier work has proved that a distance of 80 cm. between rows with plants thinned out to 35 cm. in rows is most suited to local conditions. Experimental work on the production of maize for green forage under irrigation has been given attention and rates of seeding and fertilizer tests have all been the subject of careful study.

AREAS UNDER MAIZE FOR GRAIN AND FORAGE :

1931	23374 dunams
1932	39373 dunams
1933	61448 dunams
1934	68500 dunams.

PRODUCTION OF GRAIN IN TONS :

1931	1535
1932	891
1933	345
1934	381

39. *Vegetables* :— The production of vegetables continues to increase, but local supplies cannot meet the demand. Imports from neighbouring countries show a decided increase. Syria's imports has risen from 54 tons in 1931 to 160 tons in 1934.

In the citrus belt the intensive cultivation of vegetables between young trees provides a lucrative business.

On the coastal plain and in the irrigation areas of the Jordan Valley, several Jewish groups are devoting their energies solely to the production of vegetables. Prices throughout the year have remained high.

At each of three Agricultural Stations, Acre, Majdal and Jericho, an area is devoted to production of seed, the acclimatization of imported varieties, the determintation of the earliest and latest dates of profitable planting and the production of seed and seedlings for distribution.

Seedlings of various classes of vegetables in the vicinity of 500,000 and 2000 kilogrammes of seed have been distributed to market gardeners and village schools.

It is very evident that the better class of vegetable is commanding a higher price in the market, and that the coarse baladi vegetable is giving place to the imported type.

PRODUCTION IN TONS

1930	12865
1931	15068
1932	24371
1933	21305
1934	36465

Introductions during the year at Agricultural Stations include three varieties of asparagus and an imported type of Jerusalem Artichoke.

The cultivation of mushrooms from English spawn was attempted with successful results. Owing to the lack of suitable caves under departmental control, vaults in an office building had to be used.

41. *The Tobacco Industry* :—The dry conditions of the previous year, in conjunction with the poor prices which had been the result of over-production, and demands of manufacturers for a better leaf, had decreased the area under the crop considerably.

This season, however, a remarkable display of enthusiasm was shown. The area of 9328 dunams in 1933 rose to 19948, probably due to the opening of a new cigarette factory in Nazareth, the very favourable climatic conditions obtaining in spring, and the increase in the numbers of licences issued in the Samaria district.

Gradually but surely the areas on which Turkish tobacco is grown are being limited to the ranges of Acre and the Galilean hills.

While it is indisputable that the northern hills produce the finest quality leaf, there certainly are other districts where the crop might be profitably grown.

In the central districts only comparatively small areas have been cultivated hitherto. Owing to the loss of revenue through illicit practices, it has been found imperative to restrict the number of licences.

The yield per dunam was a good deal in excess of that of the previous year in addition to the area being double that in 1933.

PRODUCTION OF TOBACCO.

Year	Dunams	Tons
1930	23,457	953
1931	13,479	504
1932	12,369	571
1933	9,328	402
1934	19,948	1012

The following schedule shows the amount in mils per kilogram obtained by growers for the last five years :—

Year.	1st Quality. Mils.	2nd Quality. Mils.	3rd Quality. Mils.
1930	80	40	20
1931	100	78	46
1932	93	62	46
1933	100	85	62
1934	120	100	80

Imports show a decided increase, thus :—

IMPORTS OF TOBACCO.

Year	Tobacco Leaves		Tobacco Cut		Cigarettes	
	Kgs.	Value £P.	Kgs.	Value £P.	Kgs	Value £P.
1930	114848	24754	2563	1053	28444	16329
1931	101271	19294	2270	1021	23460	13177
1932	75513	17150	3012	1616	27206	16441
1933	88303	20207	3406	1666	33715	20521
1934	127229	32339	3974	2229	46865	28388

42. AGRICULTURAL EDUCATION :— The further development and intensification of field work in cooperation with the more progressive type of farmers, is the main object of the Service, in order to improve the agricultural practices of the Arab farming community.

There has been a decided increase in the number of demonstration plots of all types.

The attention of the small peasant is being directed to the value of the conservation of fodder as hay and silage, as a reserve for dry seasons.

Extended issues of oat and vetch seed for the season were made. The conservation of green fodder in the form of silage is unknown. Farmers who with grave trepidation and only after considerable trouble could be induced to put down small pits at the request of the field Service, are agreeably surprised at the readiness with which their domestic stock eat the product. The issue of maize seed to farmers is made annually for the purpose.

Every endeavour is made to change the poor type of rotation practised by the majority of farmers. The Musha' system of land tenure is in this, as in every other attempt to promote a better system of farming, the principal obstruction to any form of progress.

Where possible, plots of 75 dunams were loaned from villagers in substitution of the small five dunam plots hitherto utilized. These are farmed on a sound three course rotation. The seed is issued gratis and implements given on loan. Connected also with these plots are demonstrations of the benefit to be gained by the use of chemical fertilizers. These are also supplied gratis.

In cooperation with the Department of Education, 20 plots of 12 dunams each were established in villages where the local schoolmaster has had a course of training at the extension class of the Kadoorie Agricultural School, Tulkarm. Here also the same conditions as for the 75 dunam plots apply. In connection with School Gardens, the impetus given by His Excellency the High Commissioner in presenting a cup for the best garden has resulted in some very fine efforts by scholars.

Private enterprise plays a big role in the promotion of Agricultural Education in the country. The old established Agricultural School of Mikveh Israel near Jaffa, annually turns out thirty to forty young men well trained in both practical and theoretical Agriculture.

In the curriculum of a children's farm at Ben Shemen, the teaching of Agriculture plays an important part, as is the case at the Orphan Institution at Meir Shfeya. At Nahalal on the plain of Esdraelon, and at Ayanoth near Ness-Tsiyona there are Agricultural schools for girls. There are Arab Agricultural schools at Beit Jamal (Salesian Fathers) and at Rafaat under the auspices of the Latin Patriarchate, in addition to the Kadoorie Agricultural School at Tulkarm.

The Department of Education has also established in connection with the village school at Dura in the Hebron sub-district, a comprehensive training centre. Boys are taught simple arts and crafts such as shoe-making, carpentry, and blacksmithing in addition to general agricultural and horticultural practices. During the year, a scheme to obtain 150 dunams of land in the village for a combined horticultural and agricultural section, was approved. The cost of the land will be borne equally by Government and the villagers. An area of 20 dunams will be set aside for horticultural work, the remainder being devoted to the production of good seed grain. The area will be worked by a reliable local farmer; and seed, fertilizers and implements will be supplied by the Government Department of Agriculture. Should the scheme meet with success, similar demonstration farms will be established in other centres.

SCHEDULE OF DEMOSTRATION PLOTS.

	1931/32	1932/33	1933/34	1934/35
Village Demonstration Plots (75 dunams)	23	34	53	33
Village Demonstration Plots (12 dunams)	—	—	—	20
Seed Plots	126	199	314	627
Potato Plots	31	43	58	95
Oat & Vetch Plots	—	18	108	334
Maize Plots (Silage)	—	—	429	441
Maize Plots (Seed)	—	9	34	445

SCHEDULE TO SHOW THE ACTIVITIES IN CONNECTION WITH SCHOOL GARDENS.

School	No. of teachers	No. of teachers trained in Agriculture	Area under 5 dunams	Area above 5 dunams
Nablus	12	5	8	4
Jenin	9	4	7	2
Tulkarm	19	7	11	8
Jerusalem	12	7	8	4
Hebron	3	3	3	
Acre	18	10	11	7
Nazareth	8	4	6	2
Safad	14	3	5	9
Tiberias	8	2	3	5
Beisan	3	1	1	2
Jaffa	10	6	8	2
Ramleh	22	6	14	8
Gaza	17	8	8	9
Beersheba	3	1	1	2
Haifa.	11	4	7	4

SEED AND TREES SUPPLIED FROM DEPARTMENT OF AGRICULTURE TO SCHOOL GARDENS.

Type of Seed and Tree	Varieties	Quantity
Wheat	6	240 Kgs.
Barley	4	150 Kgs.
Peas	3	55 Kgs.
Oats	2	25 Kgs.
Potatoes	1	750 Kgs.
Tomatoes	3	500 Grams.
Forest trees		14419 trees
Fruit trees		1209 "
Grape vines		5866 "

TREES AND VEGETABLES ETC. RAISED IN SCHOOL GARDENS.

Fresh vegetables sold	£P.117.
Seedlings distributed to farmers	81,450 seedlings
Seed of vegetables sold to farmers	24 Kgs.
Forest trees distributed	6358 trees
Fruit trees distributed	1153 "
Stock of fruit tree seedlings in gardens	34500 "
Fruit trees purchased from contributions of students and distributed	460 "
Fruit trees grown i nschool gardens	1388 "
Poultry raising is practised in	14 gardens
Beekeeping is practised in	14 gardens
Silkworms are raised in	5 gardens
30 spraying machines are at school gardens and were used by	468 farmers.

43. AGRICULTURAL STATIONS :— During the past season, no extension has been made to the areas of the five Agricultural Stations.

The Station at Acre still maintains its position as the main Experimental Station at which the improvement of staple cereals is given primary attention. The remaining stations are annually supplied with seed from Acre.

The acclimatization of locally grown crops, the production of vegetable seed for distribution, and mass production of cereals and leguminous grain, coupled with experimental work in connection with cereal, leguminous and miscellaneous crops, both rain grown and under irrigation, are carried out on an extensive scale.

The Stations at Farradiya and and Majdal hainly serve for the production of true to type grain of varieties suitable to the districts they serve.

At the Beisan Station, on the plateau above the Jordan and irrigated by free flow from springs at the foot of Mt. Gilboa, irrigated crops of cereals, forage crops and vegetables are raised. Experimental work on duty of water is in progress.

Similarly in the Agricultural Section of the Jericho Horticultural Station, attention is given to the production of vegetables and forage, primarily to determine the earliest and latest times of planting in order to enable gardeners to put supplies of vegetables on the market at 'off-seasons' in order to obtain higher prices.

Acre Agricultural Station :— The work in hand at this Station is as under:—

1. Propagation of cereals, and leguminous crops for distribution.

2. Experimental work :

   (a) Rotation of crops and the influence of preceeding crops of wheat. Individual, plot, and field selection of cereals, and the introduction of varieties and varietal tests.

   (b) Work on the physical improvement of soils.

   (c) Fertilizer experiments.

   (d) Control of pests in stored grain.

3. Grasses and Forage :

   (a) Trials of imported grasses in field plots.

   (b) Propagation of imported grasses in plots for seed production without irrigation and for growth under irrigation for forage production tests.

4. Introduction of new crops to test their economic value.

5. Vegetables:

   (a) Introduction, comparative tests of varieties and acclimatization thereof.

   (b) Production of seed of most suitable imported and local varieties.

In keeping with yields of winter cereals throughout the Northern District, the Station crops, though well in advance of local ones, were not up to the usual standard.

The mild weather in the spring of the year was responsible for there being little loss of soil moisture after the heavy February rains and summer crops came away very well. With the exception of the sesame, these crops yielded heavily.

The total area under cultivation was 1431½ dunams, excluding the hay crop of two hundred and eighty dunams, as shown in the schedule below . The wheat crop was badly affected by red rust.

SCHEDULE OF AREAS UNDER CROPS AT THE ACRE STATION.

	1932/33		1933/34		1934/35	
	Area in Dunams	Yields in Tons	Area in Dunams	Yields in Tons	Area in Dunams	Expected yield in Tons
Wheat	194	12	421	41 3/4	360	38
Barley	127	16	263	39	225	27
Oats	21	3 1/2	55	6	50	7
Kersenneh	57	1 1/2	161	7 1/4	110	3
Gilbaneh	6 1/2	1/2	33	3 1/2	40	2 1/2
Lentils	10	1/4	5	1/2	15	1 1/4
Lupins	33	1 1/2	—	—	10	1/2
Beans	19	1	38	3	—	—
Fenugreek	32	3/4	30	3 3/4	10	1
Peas	—	—	17	1/4	10	3/4
Chickpeas	37	1	—	—	30	1 1/2
Vetch	65	3/4	—	—	145	6
Maize	150	2	319 1/2	29 1/2	350	35
Dura	—	—	45	4 1/2	30	2
Sesame	—	—	45	1/2	45	1

The following schedule reflects the yields of the main crops at the Acre Station.

Variety	Area	Yield per dunam	Bushels per acre
Wheats.			
Jaljuli	158	110 Kgs.	14 1/2 b.
Haurani	101	96	12 3/4
Nursi	93	128	17
CCC	15	82	11
Mughrabi	49	45	6
Owdja	5	—	—

Note :—The Owdja was entirely destroyed by rust and the CCC and Mughrabi very badly affected.

Variety	Area in dunams	Yield per dunam—Kgs	Yield in bushels per acre
Oats.			
Kanotta	30	70	9 1/3
Red Texas.	25	166	22
Barleys.			
Hirawi	133	177	23 1/2
4000	50	150	20
Mariouti	80	140	18
Legumes.			
Kersenneh	161	45	6
Gilbaneh	33	110	14 1/3
Horse beans	33	40	5 1/3
Peas (Field)	17	Complete failure	
Fenugreek	30	132	17 1/2

Variety	Area in dunams	Yield per duanm—Kgs.	Yield in bushels per acre
Maize			
Baladi Horse Tooth	214	140	18
Hickory King	7	171	22¾
Anveld	9	183	24
Boesman	11	181	24
Peruvian Yellow	14	153	20
Potchefstroom Pearl	20	140	18
Wisconsin	15	160	21
American White Flint	10	150	20
Sahara Yellow	19	142	18
Dura Baladi	45	100	
Sesame			

Thus from the foregoing, the yield from this Station totalled in round figures 42 tons of wheat, 40 tons of barley, 6 tons of oats, 15 tons of leguminous seed, 29½ tons of maize and $4^{1}/_{3}$ tons of dura.

Of the above, after cleaning and grading, and having deducted the requirements for Agricultural Stations, 30 tons of wheat, 29½ tons of barley, 5 tons of oats, 13 tons of legumes and 30 tons of summer crop seed were either sold or distributed to farmers gratis.

44. *Experimental Work* :— In the crop rotation field, fourteen various styles of rotation are under trial. In the soil improvement section the value of application of ash, sand, decomposed town rubbish and farmyard manure are under comparison. Definite results are as yet not complete, but for the first season, yields pointed in favour of farmyard manure.

Fertilizer trials with varying rates of superphosphate, nitrate of soda, sulphate of ammonia and nitrochalk in various combinations are in hand. In the selection field 592 strains of 29 varieties of wheat and 265 strains of 21 varieties of barley were under trial. This season 29% and 73% respectively were eliminated for various reasons.

The susceptibility to rust of the varieties of barleys and wheats grown at the Station is under observation.

Similarly the degree of drought resistance of most varieties has been ascertained and their suitability for early mid-season or late maturity has also been the subject of test.

On the control of diseases, little other than disinfection of seed against smut by the usual methods has been done. Perhaps the two most dangerous and common pests are the grain weevil (*Calandra orzae and granaria*) and the Anogumois moth (*Sitotroga cerealella*). Exhaustive experiments conducted at the Station resulted in the production of important data as to the best methods of control.

45. *Grass Work.*

Section A.

An area is reserved solely for seed production from small plots and where irrigation is only resorted to in extreme circumstances.

Section B.

Here bulk quantities have been sown for seed production under dry conditions.

Section C.

An area near Napoleon's Hill is reserved for field trials on which grasses are scattered on unploughed land and harrowed in on plots treated and untreated with fertilizers. On an adjacent area, similar sized plots of natural grasses are similarly treated for comparative purposes.

In Section A, eighteen varieties of imported grasses were sown, and also various types of forage plants which had shown satisfactory growth and were worthy of further trials in addition to many new introductions.

In Section B, seven varieties of grass were a complete failure. Germination and the subsequent winter and early spring growth were fair but all failed to survive the early summer and produce seed.

In Section C, a similar failure was recorded. All plots on both Sections B and C have been resown during the present season.

46. *Introductions* :— Among the recent introductions, the following have been planted: Robinson's Champion Ox Cabbage, four varieties of soya beans (increased during the present season to eleven), fourteen varieties of millets (increased this season to seventeen) and pigeon pea (Cajanus indicus).

47. *Vegetable Section* :— Here in an area of ten dunams the introduction, testing, and acclimatization of varieties of vegetables is carried out. Bulk crops are sold on the local market and always command high prices. All unsatisfactory varieties, after a three year's trial, are discarded.

Annually a large supply of seed is gathered from early mid-season and late maturing vegetables and distributed to farmers.

Over forty varieties of tomatoes from all parts of the world have been under observation. A fairly large percentage has already been discarded for one or more reasons such as susceptibility to disease, unsatisfactory yield and quality, or because the period of maximum yield did not coincide with the time of satisfactory market prices. The varieties most suited to local conditions have been narrowed down to Princess of Wales, Imperator, Best of All, Every Day and La Marmande.

Eight introduced varieties of eggplants show that "long purple" meets the local demand.

48. During the year the staff was increased by one assitant superintendant, and a specialist in vegetable culture. A considerable increase in modern machinery was made and another tractor added to the Station.

All the forage, screenings and second quality grain, tibn and straw are issued from this and other Stations to the Stock-breeding Service.

49. *Beisan Agricultural Station* :— Continued experimental work and grain production has been carried out at this Station. The area of 240 dunams for agricultural work alone is somewhat small to supply farmers of the district with selected grain. However, the harvest of 1934 produced comparatively large quantities, enabling 2½ tons of wheat, a similar quantity of oats, one ton of

barley, 1½ tons of legumes and ¼ ton of linseed to be distributed or sold. Additionally, 6 tons of green fodder were produced and disposed of. Eleven tons of tibn and 7½ tons of hay were given to the Stock-breeding Service. There is every prospect for a fine harvest in the present season. Barley is expected to yield 30 bushels per acre.

SCHEDULE OF AREAS UNDER CROPS AT BEISAN STATION.

	1933/34		1934/35	
	Area in Dunams	Yield in Tons and Kgs.	Area in Dunams	Expected Yield in Tons
Wheat	26	2 1/2	14	1 1/2
Barley	21.5	1 1/4	10	3 3/4
Oats	10	2 1/2	10	1 1/2
Vetch	22	1/2	18	1
Linseed	7	1 1/4	—	Washed away
Lentils	5	—	4	1/2
Peas	4	320 Kgs.	3	150 Kgs.
Beans	20	1/2	8 1/2	1
Maize	26	1	25	5
Sesame	9	Failure	10	1/2
Hay.	25	8 1/2	4 1/2	2 3/4

The canalization scheme, completed early in 1934, has permitted a considerable extension of work in connection with duty of water experiments.

Good progress has been made in the vegetable section, attention being given to the production of seedlings for distribution.

Bulk crops of vegetables are sold on the local markets where the Station produce is greatly in demand, selected plants being left for seed.

A total of 148,740 vegetable seedlings was supplied to market gardeners during the period covered by the report.

In the forage section, 14 varieties of grasses, nine of lucerne, five of vetch, and four of clovers, were under trial.

An area set aside for Jerusalem Artichokes yielded 2½ tons to the dunam.

64. *Majdal Agricultural Station* :— Following a year of preparatory work, the first harvest gave very pleasing results.

Little or no intensive experimental work is carried out at this Station, the main object being to produce bulk grain of a type suitable for the district for subsequent distribution and sale.

A small plot of 10 dunams is annually set aside for acclimatization work and varietal tests. A further area of two dunams is under grasses, and eight dunams for a vegetable section, provides a source of revenue, at the same time, demonstrating the advantages or otherwise of various dates of sowing. A total of 130,500 vegetable seedlings was distributed.

The following quantities of grain were harvested from winter crops :—

	1933/34		1934/35	
	Area in dunams	Yield in Tons & Kgs.	Area in dunams	Expected yield in Tons & Kgs.
Wheat	160	11 1/2	100	8
Barley	84	7 1/2	56	5 1/2
Linseed	7	400 Kgs.	20	2 1/2
Vetch	10	1/2	30	Complete failure
Kersenneh	65	3 1/2	—	—
Beans	—	—	46	2 3/4
Peas	25	1 1/4	—	—
Dura	19	1/2	50	1
Maize	25	Failure	30	—
Chickpeas	12	230 Kgs.	—	—
Sesame	—	—	20	1/2
Water melons	—	—	10	—
Wimmera Rye Grass	—	—	10	50 Kgs,
Hay	48	7	25	8 1/2

The summer crops were a failure, with the exception of dura.

Every effort was made to assure a good stand of maize but without success.

51. *Faradiya* :— The area of the Agricultural Section of 150 dunams was increased by a further 50, and negotiations are in hand for the addition of another 200 during the present year.

The Station is in no way experimental. A three course rotation is adopted, and save for a plot of 10 dunams from the 66 dunams of each area for cereals, legumes and summer crops, for varietal work, the whole area serves for production of true to type grain of suitable varieties for farmers of surrounding villages. Locally favourable climatic conditions assured a good winter harvest. Results were on the whole very pleasing with the exception of the oat crop.

Yields of wheat averaged 85 kilograms per dunam or 12½ bushels to the acre with a maximum of 132 kgs. per dunam for Jaljuli.

The barley went a little better averaging 108 kgs. per dunam or 14½ bushels per acre with Hirawi first with a yield of 111 kgs. per dunam.

In the legume section, yields were distinctly good. Vetches, not usually grown locally, realized 108 kgs. per dunam, kersenneh 120 kgs. per dunam and horse beans 75 kgs. per dunam.

The Station, after all grain had been graded and requirements for the coming season deducted, was able to supply 2¼ tons of wheat, 4 tons of barley, 1¼ tons of kersenneh, 1 ton of lentils and 1 ton of vetch. In addition, sufficient hay was reaped to supply the needs of the Station stock.

The cropping plan for the 1934/35 season includes 56 dunams under cereals, 55 dunams under various leguminous crops and 66 dunams under summer crops, as shown below :—

	1933/34		1934/35	
	Area in Dunams	Yield in Tons & Kgs.	Area in Dunams	Expected Yield in Tons & Kgs.
Wheat	27	2	34	3
Barley	12	1 1/4	17	2 1/2
Oats	3	395 Kgs.	5	1 1/2
Beans	10	151 Kgs.	10	3/4
Vetch	5	363 Kgs.	17	3/4
Lentils	15	586 Kgs.	14	3/4
Berseem	3	1/2 hay	5	3/4
Kersenneh	10	15 3/4 Kgs.	5	1/2
Hay, Oats & Vetch.	7	2	7	3 1/2
Sesame	20	220 Kgs.	3	75 Kgs.
Maize	5	50 Kgs.	35	2 3/4
Dura	5	74 Kgs.	20	1/2
Chickpeas.	10	433 Kgs.	10	1/4

52. *Jericho* :— The levelling of the 90 dunams which comprises the new Agricultural Section was completed.

During the year, about 75 dunams, over which irrigation was possible, were available for intensive cultivation. It was impossible to cultivate any crops on the remaining 25. It is hoped that this area will be brought under irrigation by the autumn of the current year.

The general work is confined to raising vegetable and forage crops, with a view to determining the earliest and latest dates of planting for the Ghor area, compatible with economic production. Small areas are under forage crops.

Continued experimental work mainly with potatoes, tomatoes and cucurbitaceous vegetables are giving valuable data. Trials with pigeon pea, asparagus, and soya beans have been made during the year.

THE POTATO INDUSTRY.

53. The potato has never been regarded as a staple article of diet of the Arab population, and moreover has not been considered a profitable crop to grow until fairly recently. The cultivation of potatoes prior to 1930 was restricted generally to Jewish settlements, and as far as Arab growers are concerned, to gardens of the sandy loam soils in the vicinity of Lydda and Ramleh. Insignificant areas were cultivated in the Gaza sub-district, but with indifferent quality of seed and poor cultivation, the remuneration received by fellaheen was not such as to give any decided impetus to an extension of the area annually cultivated.

When in 1930, the Egyptian Government imposed a high protective tariff on Palestine grown water melons, farmers of Gaza and Bedu of the south-western part of Beersheba received a serious set back. They depended on the export of their melon crop for a quick cash income.

In potato cultivation in these districts there was undoubtedly a good substitute, more especially as soil conditions in the region were ideal. The increase in area in this sub-district under the crop has been phenomenal, and this season, particularly good results from imported seed have made farmers very sanguine that they have found a reliable source of income.

The import of potatoes is annually increasing due mainly to the growing demands of the urban population. Imports have doubled during the past five years, viz : —

Year	Tons	Value
1929	6548	£P.48940
1930	7431	43694
1931	6822	48098
1932	7780	44857
1933	9753	45257
1934.	12349	73150

Every effort is being made by the Department to encourage the cultivation of this crop, in order to decrease these heavy imports, and to give further inducement to the promotion of mixed farming as against monocultural practices.

Addresses to farmers and market gardeners, the distribution of simple-worded pamphlets and technical notes, free issue and sale of imported seed, the establishment of demonstration plots, and the imposition of a protective tariff have been used as a means to the desired end.

That the propaganda has met with succesful results is exemplified in the following schedule :—

Districts	1930/31 area in dunams	1934/35 area in dunams
Gaza-Majdal	200	1092
Jaffa-Ramleh	1703	3850
Northern	957	1191
Jerusalem	45	101
Total	2905	6234

Note:— Figures do not include areas planted in spring of 1935, except for Jerusalem District. It is estimated that, in round figures, 7000 dunams are under potatoes and that the year's crop will total 4200 tons.

Appreciable demands for a supply of British seed have already been submitted to Agricultural Inspectors, and it is anticipated that in the coming season there will be a marked increase in the area under cultivation in all Sub-Districts.

In the northern districts, the popularity of the crop was not so marked as in the southern part of the country, and the area under potatoes only showed a 24% increase over the past four years. It is hoped that results from the seed issued in the summer and the good yields obtained from winter crops will have a stimulating effect on the cultivation of the crop.

The imposition of a protective tariff was imperative to stimulate the potato industry. The cost of production was comparatively high and is increasing. Prices realized by growers, in the local markets, were not so high as to make them enthusiastic in growing increased areas, and in fact potatoes, when compared with the profits gained from production of other vegetables, were being produced at a loss. The inevitable demand for a further increase of the protective tariff was given sympathetic approval by Government and in 1933 was increased from £P.1 to £P.3 per ton during the main harvesting season 1st of April to 31st of August, subsequently altered to July 15th.

The main planting season is from November to February and in instances to March, with a corresponding lifting season of March until June. Yields through the country average ¾ to 1 ton per dunam, but in many instances are much higher.

It is evident that the country cannot hope to grow its requirements of over 15,000 tons from winter planting alone.

Further efforts on the part of the Department to induce farmers who had either lift or free flow irrigation to plant a late summer crop were put in hand in September, 1934. A consignment of Syrian potatoes, in the absence of English seed, was distributed to farmers in the Beisan sub-district, the Ghor el-Fara of Nablus, the Gaza, the Ramleh-Lydda and the Beisan areas.

In all cases very satisfactory results were obtained save in the Ghor El-Fara where, of the 18 demonstration plots, 16 were washed away in the severe floods of February. The two undamaged plots gave yields of nearly 2 tons per dunam and it is confidently expected that appreciable areas will be planted with potatoes in this locality in the late summer of 1935.

The yields from crops sown in September and October will be on the market when the lower import duty is in force. In the event of there being an appreciable increase in the area grown under irrigation, and in view of the large imports at that season from Cyprus, it will assuredly be necessary to protect this section of the potato growing community; but it is realized that it would be an undue tax on the consumer to impose a protective tariff at the present time when the quantity produced is not substantial.

Though considerably in excess of that of the previous year, the areas of the late summer crops under irrigation were negligible, only 252 dunams being planted in the southern and 346 in the northern area.

Seed :—Exhaustive varietal tests conducted at Agricultural Stations and practical field trials have conclusively proved that imported seed from the United Kingdom is the most suitable for the country. Dutch varieties come a good second with Syrian seed which is grown in the highlands in very close competition.

Seed potatoes obtained from Cyprus, originally secured from the United Kingdom, have given very disappointing results when used for both winter and late summer plantings.

Imports by the Department of about 10 tons of English seed per annum for free distribution were found to be insufficient and in 1934, in addition to a gratis issue of that quantity, 46 tons of Up-to-date seed, dressed to 2" size, were purchased and sold at cost price. An easy sale would have resulted had the quantity imported been trebled.

The question of being able to secure good seed is by no means the least important problem in the production of remunerative crops. Farmers have realized that imported European varieties, whether English or Dutch, give superior results to those from neighbouring countries. This was exemplified in the winter of 1934 when merchants were able to dispose of imported lots of Up-to-date and Great Scot varieties, landed at £P.5.500 mils to £P.6 per ton c.i.f., at from £P.10 and up to £P.12 per ton.

For the winter crop there is no difficulty in securing abundant supplies. Liverpool merchants can meet the requirements of growers and land c.i.f. at Jaffa or Haifa good dressed and sized Irish seed at from £P.5.500 mils to £P.6 a ton, dependant on variety.

For the September sowings in the irrigated areas, English seed has not yet been imported, mainly due to the very small area hitherto sown at that season. In fact, it was only during the year under review that cooperative plots were put down and Syrian seed was, therefore, used. Immediately prior to the floods in the Nablus sub-district, which resulted in the September sowings being completely washed away, it was evident that very heavy crops would result from the Syrian seed.

With the question of seed supply for early autumn sowings is coupled the more difficult problem of the storage of tubers from the early summer lifting.

While no reliable data can yet be given, experiments are in hand at Agricultural Stations to determine whether, with the prevailing warm temperature, tubers can be stored satisfactorily from March and June until September.

Small lots have also been put into cold storage for a similar purpose.

Potato Diseases :— Every precaution is taken by the Department against the introduction of diseases. Already there are some in the country. Among the most prevalent are *Rhizoctonia solani* and *Rhizoctonia bataticolata* (Reichert) which have this year affected crops, but not to any great extent. The effect of time and depth of planting on these diseases is the subject of research now in progress.

Of the diseases which have undoubtedly been introduced into the country are Common Scab (*Actinomyes scabus*), Powdery Scab (*Spongospora Subterranea*) and, unfortunately, Late or Irish Blight, caused by *Phytophtora infestans.*

In the Acre and Jericho Stations, a good deal of damage to potato crops has been done by an insect pest — *Chlorita signata.* This pest is the subject of intensive research by the Entomological Service of the Department.

Markets and Prices :— From an examination of the rise and fall of the average prices during the period to which this report refers, there is little to show that the cost of living has been materially affected. A rise or fall of £P.1 per ton means only a difference of 1 mil per kilogram or a farthing per two pounds.

IMPORTS FOR 12 MONTHS ENDING 31ST MARCH, 1935.

	Cyprus	Syria	Others.
April	334	—	66
May	436	2	4
June	614	13	4
July	195	659	—
August	9	652	—
September	3	931	1
October	16	924	462
November	703	232	440
December	1055	33	101
January	1052	19	—
Febraury	1131	2	243
March	1508	5	242

PRICES APRIL 1934 TO MARCH 1935.

	Per Ton. £P.Mils
April	7.497
May	8.597
June	9.666
July	8,420
August	7.927
September	7.447
October	8.263
November	8.974
December	9.220
January	8.540
February	9.110
March,	8.690

AVERAGE COST OF PRODUCTION FOR ONE DUNAM OF POTATOES :—

			£P.Mils.
Cost of seed @ 120 Kgs. per dunam at £P.6 per ton	=	720 Mils	—.720
Preparation of land :			
2 working days @ 250 Mils	=	500 Mils	
1 working day @ 120 Mils	=	120 Mils	—.620
Sowing :			
1 working day @ 120 Mils	=	120 Mils	—.120
Cultivation :			
4 working days @ 120 Mils	=	480 Mils	—.480
Manure :			
2 tons @ £P.1.100 Mils	=	£P.2.200 Mils	2.200
Lifting :			
2 working days @ 120 Mils	=	240 Mils	—.240
Transport :			
For average yield of 1 ton per dunam	=	360 Mils	—.360
Bags, incidentals, etc.	=	£P.1.000 Mils	1.000
Tax	=	035 Mils	—.035
			5.775
Average yield — 1 ton @ £P.9			9.000
		Balance	3.225

POTATO DEMONSTRATION PLOTS :

District	No. of Demonstration Plots	No. of Farmers to whom English seed was sold	Fertilizers Demonstration Plots
Northern.	52	143	16
Southern.	9	70	7
Jerusalem.	34	25	5
Total	95	238	28

54. *Research and Investigation* : — Apart from the field work at the Agricultural Stations, research work proper is not undertaken by the Agricultural Service. Close touch, however, is kept with the Research Station of the Jewish Agency at Rehovoth and the Hebrew University.

The main activities of the Service in investigation work comprise the introduction and testing of crops of economic value not usually grown in the country; the acclimatisation and breeding of cereals, legumes, miscellaneous forage and grass crops and vegetables, and eradication of pests and diseases.

The following tables show the activities of the Service in this respect :

Field crops under trial :

	1933.	1934.
Wheat	62 Varieties	27 Varieties
Barley	31 "	23 "
Oat	13 "	13 "
Maize	12 "	15 "
Vetch	4 "	4 "
Beans	6 "	7 "

In the forage and grass section there are 108 varieties under trial both as irrigated and rain-grown crops.

In the vegetables section there are :—

Tomatoes	40 Varieties
Eggplants	8 "
Pepper	16 "
Cabbages	8 "
Red Cabbage	8 "
Savoy	4 "
Kohlrabi	8 "
Cauliflower	11 "
Lettuce	8 "
Peas	13 "
Broad Beans	6 "
Dwarf Beans	23 "
Carrot	18 "
Beet	9 "
Radish	10 "
Turnip	6 "
Onion	7 "
Potatoes.	24 "

Other vegetables include varieties of cucumber, spinach, squash, melons, rhubarb and asparagus.

METEOROLOGICAL REVIEW.

83. The Official Meteorological Stations have not been increased during the year. The ten now maintained, including one at the Agricultural School of the Salesian Fathers at Beit Jamal, are considered sufficient to meet the needs of the country. The records received from observers are scrutinised by the Meteorological Service, Cairo.

In addition, rainfall records are received from 51 non-official stations. Comparative statements of rainfall, with the average of previous years, are compiled, and summaries are attached hereto.

G. G. MASSON
Chief Agricultural Officer.

GOVERNMENT OF PALESTINE.

DEPARTMENT OF AGRICULTURE AND FORESTS.

STATEMENT OF RAINFALL FOR THE SEASON JUNE 1934 TO MAY 1935 AS COMPARED WITH AVERAGE RAINFALL.

(In Millimetres).

27232—1500—23.8.35—G.C.P

tation	June to Sept. 1934	October 1934	November 1934	December 1934	January 1935	February 1935	March 1935	April 1935	May 1935	Total for Season	Average Seasonal Rainfall	
											No. of Seasons	Mms.
Stations:												
	5,0	0.5	8,5	390,0	123,7	207,0	22,5	21,0	—	784.0	10	587,4
	4,2	3,0	21,7	232,2	100,4	149,9	18,1	19,2	—	548,7	23	619,1
	—	4.2	12,6	182.3	123,7	210,9	6,7	7,6	—	548,0	14	481,2
	0,4	0,6	13,0	444,9	88,1	160,6	9,0	1,4	—	718,0	30	531,2
ı	—	4,5	16,5	138,2	102,3	221,0	24,7	2,0	drops	509,2	87	636,6
	—	—	—	5,5	78,5	26,5	43,0	0,5	—	—	154,0	12	116,6
	1,1	—	5,8	176,6	84,1	71,9	7,5	1,1	—	348,1	24	372,5
a	drops	—	13,0	107,0	42,0	78,5	3,0	—	—	243,5	14	192,8
	—	1,5	3,5	144,3	65,6	145,9	8,7	8,5	—	377,0	9	274,2
ıl	—	3,9	4,9	146,3	69,8	216,9	22,6	drops	—	464,4	16	433,9
ficial Stations:												
	—	4,5	3,0	325,5	199,0	305,0	73,0	76,0	—	986,0	2	824,8
Naqura	—	16,0	13,0	310,5	117,0	211,0	4,5	28,5	—	700,5	2	591,5
'a	—	—	—	281,0	115,0	234,0	34,0	67,0	—	731,0	2	584,2
at Ya'aqub	—	—	—	265,0	101,0	160,0	18,0	41,0	—	585,0	2	453,5
	—	9,6	4,4	355,8	188,1	229,5	38,4	83,7	—	909,5	12	762,8
a	—	10,0	14,0	397,0	246,5	237,5	50,0	72,5	—	1027,5	2	829,2
	—	2,0	56,0	358,0	117,0	129,5	4,5	29,0	—	696,0	31	433,0	
	—	—	2,0	192,0	40,0	147,5	11,5	15,0	—	408,0	2	324,2
wat	—	7,0	—	458,5	96,0	256,0	17,0	37,0	—	871,5	2	712,0
ı	—	3,5	7,0	342,5	118,5	228,0	31,5	33,0	0,5	764,5	29	616,0
	—	—	—	220,0	52,0	154,5	1,5	18,5	—	446,5	2	407,0
ikh Hussein	—	—	—	156,5	37,0	168,5	—	9,0	—	371,0	2	311,5
	—	32,0	8,0	292,5	62,5	181,5	—	8,0	—	584,5	7	488,7
Ya'aqov	—	3,0	—	375,2	101,1	142,5	14,8	15,0	—	651,6	7	611,3
ı	—	—	14,5	229,5	102,0	342,0	11,0	22,0	—	721,0	13	596,8
	—	2,0	—	311,8	130,2	223,0	11,5	8,5	—	687,0	13	533,4
nyeh	—	—	—	111,0	48,5	35,5	—	—	—	—	2	—
a	—	3,0	1,5	289,5	99,0	208,0	10,5	8,5	—	620,0	6	450,1
ıa	0,7	0,5	7,7	293,5	93,5	194,5	9,8	1,2	—	601,4	10	477,3
h	—	6,0	14,0	242,0	96,0	342,0	30,0	12,0	—	742,0	9	641,6
emen	—	2,2	19,3	226,3	160,1	305,5	41,0	6,5	—	760,9	1	760,9
	—	0,5	3,1	225,2	76,5	140,5	7,4	1,0	0,1	454,3	15	455,0
	—	drops	drops	156,5	39,5	155,0	25,0	—	—	376,0	2	356,6
	—	4,1	5,3	199,3	90,9	135,3	9,4	0,9	—	445,2	8	418,3
Wad	0,5	0,2	0,5	210,4	102,8	222,5	36,0	3,0	—	575,9	6	437,4
Anavim	—	3,4	25,3	197,3	107,4	274,6	44,4	4,5	—	656,9	6	523,0
	—	drops	17,0	466,0	75,0	145,0	4,0	—	—	707,0	9	470,6
Yisraél	0,4	3,7	11,1	469,7	90,5	172,6	5,3	0,2	—	753,5	38	542,7
aba	—	0,5	2,0	380,8	125,8	227,7	16,9	13,1	—	766,8	2	600,5
	0,7	—	9,8	442,5	81,5	173,0	8,0	2,0	—	717,5	21	542,7
	1,5	2,0	6,0	400,9	124,2	196,2	12,5	6,0	—	749,3	6	540,5
Hasharon	—	0,7	3,4	410,2	166,1	218,6	9,2	4,6	—	812,8	2	600,5
le Tsiyón	1,0	1,0	9,5	342,0	100,0	188,5	4,5	—	—	646,5	10	525,6
	—	2,0	2,0	210,5	98,0	158,1	7,7	1,1	drops	479,4	10	414,2
	—	—	—	207,0	37,2	152,0	6,5	—	—	402,7	5	389,2
	—	—	—	93,3	88,0	203,0	28,7	5,0	—	418,0	24	534,3
al	—	—	—	160,5	106,5	86,5	6,0	—	—	359,5	9	316,1
Station	—	1,0	6,0	208,0	128,0	160,0	6,0	6,0	—	515,0	3	370,3
unis	—	—	—	115,0	56,0	117,0	22,0	—	—	310,0	2	285,7
Ahmar	—	0,2	8,0	73,5	31,5	128,2	—	—	—	241,5	3	146,9
Bridge	—	—	4,0	65,0	28,0	36,0	—	—	—	133,0	2	102,5
	—	—	7,2	180,2	60,6	158,3	10,4	11,4	—	428,1	7	353,1
a Post	—	—	0,5	36,5	13,5	12,4	—	—	—	62,9	7	60,1
	—	—	—	37,0	7,0	31,0	—	—	—	75,0	1	75,0
Zweira	—	—	—	35,0	43,0	71,5	—	—	—	149,5	1	149,5
'a	—	—	3,0	92,5	32,5	23,0	—	—	—	151,0	1	151,0
ieh	—	—	—	105,0	67,5	40,5	0,5	—	—	213,5	1	213,5
uj	—	—	7,0	21,0	1,5	22,5	3,0	—	—	55,0	1	55,0
	—	—	—	296,3	198,0	309,0	73,0	40,0	—	916,3	1	916,3
afir	—	—	5,0	10,1	0,5	12,5	—	—	—	28,1	1	28,1

GOVERNMENT OF PALESTINE

DEPARTMENT OF AGRICULTURE & FISHERIES.

GRAPHIC PRESENTATION OF RAINFALL FOR THE SEASON: JUNE 1935 TO MAY 1936

AS COMPARED WITH AVERAGE RAINFALL

(In Millimetres)

erage Rainfall		
tions	No. of Years	Milli-metres
ja	2	32·5
luj	2	57·5
b	2	59·2
Sea Post	8	61·3
y Bridge	3	96·3
o	13	115·0
: Zuweira	2	123·3
Dāmiya	2	129·7
āra	2	133·7
al Ahmar	4	136·9
āma	2	178·0
heba	15	188·6
Yūnis	3	243·1
h. Husein	3	264·0
in	10	270·3
ikh	3	281·5
jdal	10	318·3
Or	8	340·3
t	3	359·2
la	3	362·3	
	25	368·5
al Sta.	10	371·6
nāt Ya'qūb	3	391·3
rá	6	391·6
n	11	408·2
le	9	417·9
rias	32	428·3
Jimāl	17	433·5
al Wād	7	441·8
Shemen	16	449·7
raniya	7	454·4
a	10	468·3
n	15	469·3
elma	11	469·4
	8	501·0
rt 'Anavim	7	513·9
ón le Siyón	11	522·4
arm	14	524·1
ron	25	528·3
an Naqūra	3	530·5
Aviv	31	532·8
seliya	7	535·1
ona	22	541·1
é Yisraél	39	541·4
uweiziya	3	546·8
ór Savá	3	557·8
át Hasharon	3	576·0
blus	14	579·3
e	11	580·9
rón Ya'aqóv	8	585·6
areth	30	609·9
allah	2	610·9
fa	24	612·5
Zeit	10	624·9
usalem	88	633·2
Manawāt	3	636·2
ilya	2	694·7
rādiya	3	725·0
ad	13	741·7
tulla	3	764·5

Rainfall Season 1935/36	
Stations	Milli-metres
Al 'Auja	37·0
Bīr 'Asluj	66·0
Kurnub	43·5
Dead Sea Post	69·4
Allenby Bridge	84·0
Jericho	96·5
Rās az Zuweira	99·5
Jisr Dāmiya	120·0
Al 'Imāra	116·5
Khan al Ahmar	107·0
Jammāma	142·5
Beersheba	130·5
Khān Yūnis	158·0
Jisr Sh Husein	169·0
Beisān	236·5
Samakh	196·0
Al Majdal	338·1
Tel-Or	251·1
Rāfāt	365·0
'Affūla	272·9
Gaza	273·7
Majdal Sta	375·5
Jisr Banāt Ya'qūb	406·5
Gedera	391·6
Eqrón	348·1
Ramle	419·0
Tiberias	283·0
Beit Jimāl	427·1
Bāb al Wād	468·0
Ben Shemén	371·9
Qalmaniya	480·0
Jaffa	447·5
Jenin	303·2
Wilhelma	390·9
'Atlīt	587·0
Qiryat 'Anavim	458·7
Rishón le Ṣiyón	491·0
Tulkarm	403·4
Hebron	385·4
Rās an Naqūra	408·5
Tel Aviv	438·7
Herṣeliya	503·1
Sarona	507·0
Miqvé Yisraél	485·4
Al Buweiziya	472·0
Kefár Savá	472·5
Ramát Hasharon	527·2
Nāblus	352·5
Acre	515·4
Zikhrón Ya'aqóv	406·5
Nazareth	434·0
Rāmallah	461·0
Haifa	461·0
Bīr Zeit	475·0
Jerusalem	343·4
Al Manawāt	484·5
Mi'ilya	473·0
Farrādiya	516·5
Safad	488·6
Metulla	644·0

Survey of Palestine 1936.

REPORT ON THE VETERINARY SERVICE FOR THE YEAR ENDING MARCH, 1935.

CONTENTS :

I. Introduction.

II. Staff.

III. Revenue and Expenditure.

IV. Animal Diseases.

V. Animal Quarantine Service.

VI. Slaughter Houses and Meat Inspection.

VII. Veterinary Service to the Palestine Police and British Troops in Palestine.

VIII. Animal Husbandry.

IX. General.

ANNEXURES.

A) Report by the Veterinary Pathologist on the Government Veterinary Laboratory.

B) Report by the Manager on the Acre Stock Farm and Agricultural Station.

C) Report by the Senior Poultry & Beekeeping Officer on Poultry and Beekeeping Section.

D) Statistical Appendices.

CHIEF VETERINARY OFFICER'S REPORT.

I. Introduction.

This report covers the financial year commencing the 1st April, 1934, and ending the 31st March, 1935.

2. There was practically no grazing available during the summer and autumn months of 1934 due to the drought of the preceding year and the condition of village livestock before the advent of the rains was appalling.

3. Heavy rains, fortunately, fell early in October so that some feed was to be found in November. Exceptionally good rains continued to fall throughout the winter and early spring, with the result that there was an abundance of grazing available from December onwards.

4. The lambing and kidding seasons have been the best for a number of years which should enable flock masters to replace more quickly their losses in breeding stock sustained during the drought years.

5. Winter field crops are good and it is anticipated that summer crops will be excellent. Stubble grazing should consequently be available during the coming summer and early autumn months and there should be no shortage of tibn and grain with which to feed livestock up to the fall of the next year's rains.

6. No outbreaks of serious epizootic diseases occurred during the year and all livestock are, at the time of writing this report, in excellent condition.

7. The Veterinary Pathologist, Mr. S.J. Gilbert, is in charge of the Government Veterinary Laboratory at Jaffa and his report on the work conducted at the Laboratody during the year is appended as Annexure 'A'.

8. A report on the activities and development of the Stock Farm at Acre, by the Manager Mr. B.M. Cameron, is attached as Annexure 'B', and a report by the Senior Poultry and Bee-Keeping Officer, M. A. Livshitz, on the activities and development of the Poultry and Bee-keeping section is also attached as Annexure 'C'.

II. Staff.

New Appointments.

9. With the exception of the appointment of an additional clerk, there was no increase in the establishment of personnel at Headquarters.

Similarly, no additional personnel were appointed in the Animal Quarantine and Veterinary Field Sections.

A second cleaner and packer was appointed for the Government Veterinary Laboratory and a stockman for Acre Stock Farm to supervise the sheep and goat breeding sections.

Additional appointments in connection with the extension of the Acre Poultry Breeding Station and Apiary, and, District Poultry Stations and Apiaries, and the establishment of new stations at Beisan and Sarafand, were made as follows :—

1 Apiarist	— Poultry Breeding Station and Apiary, Acre.
1 Poultry Attendant	— Ditto
1 Apiarist	— Bee Breeding Station, Sarafand,
1 Poultry & Bee-Man	— Poultry Station and Apiary, Beisan.

Two Poultry and Bee-Keeping Instructors were appointed for field extension work.

RETIREMENT OF MR. J. SINTO.

10. Mr. J. Sinto, Assistant Veterniary Officer, who had long pre-war service under the Turkish Government and served the Palestine Government for 15 years, retired on pension in 1934.

In the retirement of Mr. Sinto, Palestine has lost an officer who has rendered valuable and distinguished services to its animal industries over a long period.

APPOINTMENT OF MR. D. MOSSINSON.

1. Mr. D. Mossinson, M.R.C.V.S., was appointed as Assistant Veterinary Officer to fill the vacancy created by the retirement of Mr. Sinto.

CHANGES IN NOMENCLATURE OF OFFICERS.

12. The title of the Senior Veterniary Officer, whose duties are primarily the direction and control of the Government Veterinary Laboratory and investigation of diseases of livestock, was changed to that of Veterinary Pathologist. Similarly, the title of his Assistant was changed from Assistant Senior Veterinary Officer to that of Assistant Veterinary Pathologist.

The title of "Chief Herdsman" (Acre Stock Farm) was changed to 'Superintendent, Animal Section" and the title "Quarantine Headman" to that of "Quarantine Superintendent".

LEAVE.

13. The Assistant Veterinary Pathologist, Manager, Government Stock Farm and Agricultural Station, Acre, and Veterinary Officer, Tiberias, were each absent for four and a half months on vacation leave. All other officers proceeded on local leave.

COURSES OF INSTRUCTION.

14. The Veterinary Officer, Jerusalem, while in the United Kingdom on vacation leave, attended a special course of instruction in Poultry Husbandry at the Harper Adams Agricultural College, Newport, Shropshire, arranged for Colonial Agricultural and Veterinary Officers. This course was of great benefit to this Veterinary Officer and it is hoped that such courses will continue to be held in future to allow other officers to attend them.

TRANSFERS.

15. The Veterinary Officer, Tiberias, who had been stationed for four years at Tiberias, was transferred to Jerusalem in September, 1934, and replaced by the Veterinary Officer stationed previously at Jerusalem. These transfers were necessary owing to the adverse climatic conditions prevailing at Tiberias.

Quarantine personnel serving in the Jordan Valley are transferred to quarantine stations situated in more healthy localities, as far as it is practicable so to do, annually or every two years.

STAFF.

16. The staff of the Veterinary Service at the close of the year under review consisted of the following officers :—

Headquarters

Chief Veterinary Officer	— 1
Head Clerk	— 1
Clerks	— 5
Stores Packer	— 1

District Staff

Veterinary Officers	— 6
Assistant Veterinary Officers	— 6
Stock Inspectors	— 3
Inoculators	— 9
Stablemen	— 6
Senior Poultry and Bee-Keeping Officer	— 1
Poultry and Bee-Keeping Instructors	— 3
Clerks	— 4

Veterinary Laboratory

Veterinary Pathologist	— 1
Assistant Veterinary Pathologist	— 1
Laboratory Assistants	— 4
Laboratory Attendants	— 2
Cleaners and Packers	— 2
Stablemen	— 2
Clerk	— 1

Animal Quarantine Stations

Quarantine Superintendents	— 12
Quarantine Guards	— 23

Stock Farm

Manager	— 1
Stockmen	— 2
Stablemen, Cowmen and Shepherds	— 15
Storekeeper	— 1
Clerks	— 2

Poultry Stations & Apiaries.

Superintendent, Poultry Station, Acre	— 1
Poultry and Bee Attendants	— 4
Poultry and Bee Men	— 9
Apiarists	— 2
Ghaffirs (Watchmen)	— 2

III. Revenue and Expenditure.

17. There was a considerable increase in the revenue of the Veterinary Service during the year, which totalled £P.18,313 as compared with £P.11,800 last year. The increase was principally in animal quarantine receipts resulting from the large imports of slaughter stock by sea.

Expenditure for the financial year 1934/35 amounted to £P.32,790. The main heads of expenditure and revenue are shown below :—

EXPENDITURE.		1934/35 £P.	
Administration	—	2,472.–	
Veterinary Field Service	—	9,527.–	
Veterinary Laboratory	—	4,026.–	
Animal Quarantine Stations	—	3,722.–	
Stock Farm Section	—	6,085.–	
Poultry & Bee Section	—	6,868.–	
TOTAL	—		£P.32,700

REVENUE			
Animal Quarantine Receipts	—	16,131.–	
Stock Farm Receipts	—	377.–	
Poultry and Bee Section Receipts	—	1,475.–	
Other Receipts	—	330.–	
TOTAL	—		£P.18,313

IV. Animal Diseases.

18. There was no outbreak of serious epizootic diseases, such as cattle-plague, bovine contagious pleuro-pneumonia or hæmorrhagic septicæmia, during the year under review.

FOOT-AND-MOUTH DISEASE.

19. With the exception of one sporadic outbreak of the disease in Haifa sub-district, which occurred in April last, the country was free from foot-and-mouth disease since September, 1933.

TICK FEVERS.

20. Tick-borne diseases continue to cause serious losses in cattle, sheep and goats, particularly in imported and grade dairy cattle.

As an illustration, 594 cases of tick fever in pedigree and grade cattle were treated by the veterinary surgeons of the Hachaklaith Mutual Cattle Insurance Society during the year. Of these, 82 animals died, namely, 13.8%, representing a capital loss of £P.2,870 (based on an average price of £P.35 a cow). The estimated value of losses in milk yield, abortions and condition of the cows attacked by tick fevers amounted on the average to £P.10 a cow, representing an additional loss of £P.5,940, or a total loss in the year of £P.8,810.

Excellent results were achieved at six Jewish settlements where cattle dipping tanks have been constructed by the settlers and where cattle are dipped regularly in a reliable cattle tick destroying solution; the mortality and loss in milk yield and cases of fever were considerably reduced and the herds rendered more profitable.

Settlers are convinced that the only remedy for this disease is to dip their cattle throughout the tick fever season each year in properly constructed concrete cattle dipping tanks containing a reliable tick destroying solution. They are extremely anxious to construct this coming season 20 additional cattle dipping tanks but have not the funds with which so to do. They are, however, negotiating with the Central Bank of Cooperative Institutions in Palestine and the Government to obtain loans for the purpose.

DIPPING DEMONSTRATIONS — SHEEP AND GOATS.

21. Dipping demonstrations in villages were conducted during the year in 14 centres and 15,000 sheep and goats were dipped at intervals of 14 to 21 days. The demonstrations gave satisfactory results to the fellah who is being convinced gradually of the value of regular dipping.

CONSTRUCTION OF PERMANENT SHEEP BATHS.

22. To encourage villagers, after demonstrations, to provide their own dipping baths and to dip their sheep and goats at their own expense, Government granted to 3 groups of villages loans of £P.32.- each to enable them to construct permanent concrete sheep baths, and supplied gratis the sheep dipping powder for the first season's dipping. These 3 sheep baths were constructed and used with very good results.

Another group of villagers provided funds among themselves and erected a permanent sheep bath according to Government specifications. The bath was operated satisfactorily. Three other groups of villagers have recently constructed similar sheep baths from their own funds and will be issued gratis with sheep dipping powder for the first season's dipping this coming season.

There are in all seven permanent sheep dipping baths constructed by villagers now in operation and it is anticipated that next season this number will be increased by 10.

BOVINE CONTAGIOUS ABORTION.

23. Good progress continues to be made in the control and eradication of this disease. 64 herds comprising 4,817 cattle are now regularly tested, as compared with 54 herds comprising 3,302 cattle last year. Of the 64 herds under control 42 are now entirely free of the disease and in 10 out of the remaining 22 herds no positive cases were detected for the last six months.

In connection with this work, 20,461 blood samples were collected by Veterinary Officers and tested by the Government Veterinary Laboratory during the period under review.

The profitability of those dairy herds from which the disease was eradicated has increased considerably. Higher prices are obtained for cows of such herds as compared with those of similar milking and other qualities originating from herds which are not free from the disease.

The practice among purchasers of cows to arrange for cattle to be tested before purchase has increased during the year and the Veterinary Laboratory conducted 1,015 tests in this connection as compared with 833 tests last year. Fees charged for such tests amounted to £P.100.-

BOVINE TUBERCULOSIS.

24. There were 107 cases of bovine tuberculosis detected in the slaughter houses. The affected carcases, organs and parts were destroyed. Six clinically affected cows were reported and disposed of by slaughter.

Although the incidence of tuberculosis — which is estimated to be about 5% — is low, there is no question that it will gradually increase unless definite radical measures to combat this disease are introduced.

A plan for the control and eradication of this cattle scourge and dangerous disease to human beings was submitted to, and is under consideration by, Government and, as and when funds are provided, the plan will be put into force.

BLACK QUARTER.

25. No new outbreaks of this disease were observed or reported during the period under review.

ANTHRAX.

26. There were 71 outbreaks reported involving 15,304 animals of which 538 died. 14,766 animals exposed to infection were vaccinated. The value of vaccinating livestock in outbreaks of anthrax is now realised and much appreciated by the fellah.

Veterinary Officers have explained each year to sheep and goat owners in villages the value of protecting their flocks and herds against anthrax, in order to reduce their losses from deaths which occur annually due to this fatal disease, and have offered to vaccinate their animals against payment to Government of 10 mils in respect of each sheep or goat to cover the cost of the vaccine.

With the cooperation of the District Commissioner, Jerusalem District, and the District Officers of Jerusalem-Bethlehem-Jericho, Hebron and Ramallah Sub-Districts, the Veterinary Officer, Jerusalem, has succeeded in obtaining the agreement of the majority of the fellaheen possessing sheep and goats in Jerusalem District to pay for the purpose, through the respective District Officers, to Government 10 mils in respect of each sheep or goat. Vaccination of some 40,000 sheep and goats will be commenced towards the end of May and completed by the middle of June.

Annual protective vaccination of dairy and other livestock in Jewish settlements has made marked progress due largely to the Hachaklaith Mutual Insurance Society making it a rule that all insured stock must be vaccinated against anthrax annually.

4,000 doses of vaccine were acquired by this Society through the services of this office from Australia and over 7,200 head of stock were vaccinated during the year with Australian and Italian vaccines. Since the beginning of October, 1934, no animal insured by this Society died of anthrax, except two calves which died before being vaccinated, while during the three preceding years members of the Society lost about 20 head of cattle annually valued at £P.35.- each, namely, £P.700.- as compared with £P.120.- the cost of the vaccine used to protect the animals.

The incidence of anthrax during the last five years is recorded in Appendix No. 1.

DOURINE.

27. The blood testing of equines in control of dourine was continued to the extent that can be undertaken with the present staff of the Veterinary Laboratory. Over 3,600 animals were tested during the year. Of these, 5 stallions and 106 mares proved positive. The infected stallions were castrated and the infected mares fire-branded with the letter D on the near hind quarter and their owners served with notices to the effect that the breeding of such mares is prohibited.

Every effort is made before and during the breeding season to trace, test and licence travelling and other stallions used for breeding of mares and donkey mares and so prevent the spread of this serious economic equine disease. 40 stallions were tested and licensed in accordance with the provisions of the Dourine Rules.

Owing to paucity of staff and lack of accommodation and equipment for conducting serological tests in control of dourine at the Government Veterinary Laboratory, it is not possible to examine and test equines on a sufficiently large scale to be able to reduce the incidence of this disease in any appreciable measure of time and thus lead to its ultimate eradication.

It is hoped that next year additional funds will be approved to remedy this situation and so allow for greater progress in ridding the country of this serious horse breeding disease.

GLANDERS.

28. No case of this disease was reported during the year.

Epizootic Lymphangitis.

29. There were only 2 cases reported as compared with 16 last year. Both horses were destroyed and deeply buried and their owners compensated for loss sustained in accordance with the provisions of the Diseases of Animals Ordinance, 1926.

MANGE IN HORSES, MULES, DONKEYS AND CAMELS. ,

30. Veterinary personnel continued throughout the year, in the course of their visits to villages, to examine horses, mules, donkeys and camels for possible infection with mange and to prescribe and supervise the treatment of infected animals and the disinfection of infected premises.

The number of animals examined, those found diseased and the number of the premises disinfected during the last five years are set forth in Appendix No. 2.

DISEASES OF SWINE.

31. No case of swine fever, swine erysipelas or hog cholera, was observed or reported.

SHEEP AND GOAT POX.

32. 26 outbreaks of sheep and goat pox were recorded as compared with 42 last year. Of 11,500 animals involved in these outbreaks, 497 or 4%, died. The same measures as last year were taken to combat the disease.

SCABIES IN SHEEP AND GOATS.

33. The position with regard to this disease of sheep and goats in those areas where dipping baths were erected and regular dipping is practised in control of ticks is that scabies in the dipped flocks and herds has disappeared completely.

By regular dipping in such areas there is every hope that this disease will be eventually eradicated. In any case, it will not assume serious proportions or cause such grave losses, as in flocks and herds which are not dipped.

PARASITIC GASTRO-ENTERITIS IN SHEEP AND GOATS.

34. Losses from parasitic gastro-enteritis were insignificant, the climatic conditions for the development of the larvae of the parasite responsible for this disease being unfavourable.

Very few flockmasters practise the regular drenching of their sheep and goats with a 1% solution of copper sulphate which is continually advocated by officers of this Service.

INFECTIOUS PLEURO-PNEUMONIA OF GOATS.

35. No outbreaks of this disease were reported during the year.

RABIES IN ANIMALS.

36. There was a marked increase in the incidence of rabies in animals. 142 cases were reported, of which 100 were in dogs, as compared with 118 cases last year. Of 128 brains of suspected rabid animals forwarded to the Government Central Laboratories, Department of Health, 56 proved to be positive for rabies.

The special Rabies Ordinance referred to in last year's report was promulgated in January, 1935.

With the assistance of the Police, Municipal Corporations and Local Councils, over 21,000 dogs, cats and jackals were destroyed in towns and villages as compared with 10,000 in the previous year. 1,158 dogs were licensed and registered under the Municipal by-laws, the majority being in the towns of Jerusalem, Haifa, Jaffa and Tel-Aviv.

631 suspected rabid animals were placed under observation in municipal kennels, of which 11 developed rabies. 12 cattle, 9 pigs and 2 sheep bitten by rabid animals were slaughtered and 3 donkeys were destroyed. 8 head of cattle, which were bitten by animals suspected of being affected with rabies, were vaccinated with antirabic vaccine supplied by the Central Laboratories of the Department of Health.

The incidence of Rabies and the number of animals destroyed during the last five years are shown in Appendices No. 3-4.

DISEASES OF POULTRY.

37. There were no outbreaks of fowl plague, and only a few outbreaks of fowl cholera and typhoid were reported. Several outbreaks of the acute form of cell inclusion disease occurred.

Fowl pox is widespread. Good results continue to be obtained by protective vaccination using a pigeon pox virus vaccine prepared locally. A subsidy of LP.150.— was granted to the Hebrew University to study the possibility of increasing the period of immunity conferred by vaccination of poultry against fowl pox.

Severe losses due to spirochaetosis (a disease transmitted by ticks) are sustained by poultry farmers. It is intended to arrange next year for a series of experiments to be conducted with the object of ascertaining the possibility of immunising poultry against this pest.

V. Animal Quarantine Service.

38. A further development in imports of livestock, particularly by sea route, is recorded. Animals are imported in such large numbers that the animal quarantine service, which is under-staffed, is finding it extremely difficult to cope with the volume of work involved in an effort to prevent the introduction of contagious and infectious animal diseases.

LAND FRONTIER QUARANTINE STATIONS.

39. The fourteen land frontier quarantine stations have continued to function satisfactorily. 134,228 animals, of which 9,053 were cattle, 70,239 sheep and 26,833 goats, imported from adjacent territories, were quarantined at these stations and carefully examined for possible infection with disease before release.

In addition, 17,767 transport animals and 1,004,000 fowls were examined as to their freedom from disease before being permitted to enter the country.

Quarantine revenue of these stations totalled LP.5,470.—

Certain additions to, and improvements of, the living quarters of the staff were made during the year and small animal shelters were provided at these stations. The shelter accommodation for stock is, however, as yet entirely inadequate. Additional funds were provided in 1935/36 estimates to remedy partially this situation and it is earnestly hoped that Government will approve further funds to provide the very necessary shelter for stock which is justly demanded by importers.

HAIFA PORT QUARANTINE STATION.

40. The number of animals imported by sea through the Port of Haifa has increased to such an extent that the quarantine station is continually and hopelessly congested. 256,560 animals, excluding poultry, entered this quarantine station during the year under review, as compared with 171,085 during the preceding year. Of this number 17,906 were cattle for slaughter, 609 were dairy cattle and 236,043 sheep and goats.

The accommodation at this Station for such large numbers of stock is totally inadequate. Extension in every respect is urgently needed to permit this institution to continue to function. The personnel, owing to paucity of staff, are required to work overtime continuously and it is only due to their devotion to duty that it has been possible to cope with the work.

It is earnestly hoped that Government will approve funds next year to provide for additional staff and the accommodation so vitally and urgently needed.

Quarantine revenue from this station totalled LP.10,317 as compared with LP.5,686 last year.

The majority of the slaughter cattle were imported from Bulgaria (9,097) and Roumania (8,214). Dairy cattle were imported mainly from Germany and most of the sheep and goats from Turkey (228,347 out of a total of 236,043 imported via Haifa).

APPLICATIONS FOR PERMITS.

41. Numerous applications for permission to import slaughter stock and dairy cattle from European and other countries were received from local merchants necessitating the publication of additional quarantine rules regulating the importation of stock from Hungary, Lithuania and Iraq.

Applications for permission to import cattle from the Sudan, India, Kenya and Abyssinia were refused in view of the grave danger of introducing Bovine Contagious Pleuro-pneumonia, African East Coast Fever and other extraneous stock diseases.

DETAILS OF IMPORTS.

42. Details of the number and kinds of animals imported by sea and land through quarantine stations and quarantine fees collected during the year, and a summary for the last five years, are set out in Appendices Nos. 5-7.

IMPORTS AND EXPORTS OF ANIMAL PRODUCTS.

43. Consignments of imported and exported hides and skins and other animal products were examined, as usual, by Veterinary Officers.

The number of hides and skins imported and exported during the last five years is indicated in Appedix No. 8.

VI. Slaughter Houses and Meat Inspection.

NUMBER OF ANIMALS SLAUGHTERED.

44. An increase in the number of animals slaughtered for food, particularly in the large towns and Jewish settlements owing to the increase in the number of inhabitants, is recorded.

352,412 animals were slaughtered in 43 slaughter-houses during the year as compared with 307,126 last year. Of these, 55,165 were cattle and 295,639 sheep and goats.

The numbers and classes of animals slaughtered during the period under review and a summary for the last five years, together with the number of carcases and parts thereof condemned, are set out in Appendices Nos. 9-11.

CONDEMNATIONS.

45. There has been an increase in the number of cases of bovine tuberculosis detected. The chief causes of condemnations were due, however, as in previous years, to parasitic affections, such as cysticercus bovis, echinococcosis, distomatosis and strongylosis.

WHERE MEAT INSPECTION IS CONDUCTED.

46. Meat inspection is now being conducted by veterinary surgeons in three additional slaughter-houses, namely, in thirteen slaughter houses as compared with ten last year. In twenty other slaughter-houses trained meat inspectors are employed.

NEW SLAUGHTER-HOUSES.

47. A new slaughter-house is now under construction at Beit Jala and plans were submitted recently for the construction of a new slaughter-house at Hebron.

Though meat consumption has considerably increased at Haifa, the present small and badly equipped slaughter-house, which is entirely unsuitable and inadequate to meet the town's requirements, is still being used. It is understood, however, that the construction of a modern and well equipped slaughter-house is under consideration and it is trusted that the necessary funds for the project will soon be provided.

IMPROVEMENTS—EXISTING SLAUGHTER-HOUSES.

48. Veterinary Officers are making regular inspections of slaughter-houses and recommend from time to time improvements and additions considered by them necessary. Upon their recommendations certain improvements and additions to existing slaughter houses were made during the year.

VII. Veterinary Service to the Palestine Police and British Troops in Palestine.

POLICE FORCE.

49. The Veterinary Service is responsible for the medical and surgical treatment of all animals on the establishment of the Palestine Police Force numbering 649 and stationed at Police stations and outposts scattered throughout the country.

This work requires considerable attention and prevents Veterinary Officers leaving their stations for any length of time, as they are likely to be summoned to attend to a case of sickness at a moment's notice at any time during the day or night.

Veterinary Officers are assisted by police farriers who have been instructed in shoeing and veterinary first aid work by Inspector Ley of the Palestine Police Force. 20 trained farriers are now stationed in 16 different police stations and outposts and of these 3 were trained during the period under review.

These farriers treat minor ailments and carry out treatment prescribed by Veterinary Officers.

The general condition and health of police horses was satisfactory and mortality and wastage was low. During the period under review 32 animals died, 40 were destroyed and 29 were disposed of by sale.

In pursuance of the established practice of castrating all police horses, 87 newly enrolled stallions were castrated during the year without any casualties.

Stocks of simple drugs and dressings for use by N.C.Os. and trained farriers are maintained at all stations and outposts where police horses are stationed. The stocks are replenished by half-yearly issues from the main stock maintained at the headquarters stores of the Veterinary Service.

During the period under review, 1,650 visits were made by Veterinary Officers to police stations and outposts in connection with the medical and surgical treatment of animals. They have examined 342 horses for soundness prior to purchase for police use and 118 horses proposed for casting, and attended 173 Boards of Enquiry.

Appendices Nos. 12 and 13 reflect the services rendered by Veterinary Officers and the number of horses which died or were destroyed or sold during the year.

BRITISH TROOPS.

50. The Veterinary Service is also responsible for the professional attendance to sick and injured army animals on the strength of the British Troops in Palestine. Weekly inspections of all animals, distributed in four centres, were conducted by District Veterinary Officers in this connection. A daily rate of 3 mils per animal is paid by the Army Authorities to Government for this service and receipts during the year amounted to £P.48.500 mils.

No cases of contagious disease occurred among army animals during the year.

According to standing rules, all private chargers of Army Officers are tested for possible infection with glanders before being allowed to come in contact with animals—the property of the British Army.

Several horses, the private property of British Army Officers, were castrated during the period under review.

VIII. Animal Husbandry.

BALANCE OF TRADE.

51. Imports of livestock and livestock produce increased in value from LP.543,000 in 1933 to LP.918,000 in 1934, or by about 70%.

DAIRY INDUSTRY.

52. A further expansion of the dairy industry is to be recorded. The demand for milk still exceeds the supply. Large quantities of butter continue to be imported. Imported butter is sold at a price local producers cannot compete with.

A special sub-committee of the General Agricultural Council was set up to study the whole industry with the view to formulating recommendations as to what measures should be taken to correct this state of affairs.

MEAT SUPPLIES.

53. The beef and mutton requirements of the country continue to be met by importation of foreign cattle and sheep from Europe and adjacent territories. Imports of European cattle have increased by about 50% over last year.

Some 386 tons of frozen meat were imported during 1934, principally from Australia.

TANNING INDUSTRY.

54. There is no shortage of suitable light-weight hides and sheep and goat skins for the local leather industry. Owing to the increase in the number of foreign slaughter cattle introduced into the country, few heavy hides were imported. The existing tanneries, of which there are 26, continue to operate satisfactorily.

WOOL.

55. Last season's estimated wool crop of local sheep is 495,000 kilos as compared with 442,000 kilos of the previous season. The major part of the wool is utilised locally. The production of wool, which is of a coarse, carpet-making variety, for the last five years is shown in Appendix No. 14.

IMPROVEMENT OF DAIRY COWS.

56. The improvement of dairy cows in Jewish settlements has been continued, the policy of such settlements being to cross selected cows, particularly of Damascus and Beyrouth blood, with Friesian pure-bred bulls. The second and third generations of these crosses have given excellent results. In a percentage of the third and fourth generations, however, it is observed that there are signs of deterioration, namely, lack of constitution and decline in milk yield.

The demand for high producing cows by both new and old settlements, is very great. To meet to some extent this demand and to be able to continue the improvement of dairy cattle, settlers have imported during the year 526 cows of the Friesian breed together with a number of bulls of the same breed.

Further, 69 dairy cows of other breeds have been imported from European countries.

ACRE STOCK FARM—BREEDS OF CATTLE.

57. The herd of selected Lebanese cows, headed by a pure-bred Lebanese bull, which was established last year, has acclimatised well and no deaths from tick fever have occurred. The milk yield of some of the cows (first calvers) for a full lactation period has reached 2,700 litres with an average butter fat content of 3.4%. It is expected that the yields of these cows will increase considerably after the second and third calvings.

The "Boaz" or "Balia" cows, introduced from Turkey, have produced some excellent calves of robust constitution.

The small Kerry herd imported from Great Britain in October, 1934, has settled down well and, so far, the animals have shown little distress during the hot "Khamseen" days. Five of the cows have calved, throwing bull calves. The average daily milk yield and butter fat content, so far, is good.

DISTRIBUTION OF GOVERNMENT BULLS.

58. 40 Lebanese (Beyrouth) and Boaz bulls were distributed on loan to selected villages, as compared with 20 last year. Over 50% of these bulls were fed at the expense of villagers during the breeding season; fodder was supplied by Government in respect of the others, as villagers could not afford to feed them.

All local bulls of these villages were sterilised.

The four-year-old Kerry bull purchased from the Governor of the Sinai Province of Egypt was stationed at Safad and was greatly appreciated by cow-keepers. It served 101 cows but unfortunately, in August, 1934, was attacked by acute Theileria and died within 30 hours of the onset of the symptoms.

PROGENY OF LEBANESE BULLS.

59. The progeny resulting from the crossing of village (Baladi) cows by the Government Lebanese bulls—some of the calves being now over a year old—is most encouraging. They are active and healthy and of good conformation. The demand for Lebanese bulls by the fellaheen has greatly increased as a result and it is becoming increasingly difficult to satisfy all demands received.

GOVERNMENT'S PREMIUM BULL SCHEME.

60. The Government's premium bull scheme described in last year's report was continued and extended. Premiums to the value of LP.288 were granted in respect of 48 selected village bulls distributed in 30 villages, as compared with 37 bulls last year. All other bulls of these villages were sterilised.

ACRE STOCK FARM—SHEEP AND GOATS.

61. The lambing and kidding season of the flock of sheep and herd of goats at Acre Stock Farm was excellent.

There will be sold for breeding purposes in June, 1935, nine 2½ year old rams of Awasi breed and fifteen 2½ year old male goats of the Mamber (Syrian black) breed. Some 16 Damascus male goats will be issued on loan to selected villagers for crossing with the local village female goat also in June. Next year, it is anticipated that there will be available for sale and distribution some 36 rams, 26 Mamber (Syrian black) goats and 31 Damascus male goats.

The first cross-bred kids of the local village black goat with the Damascus male goat are definitely encouraging. They resemble in a marked degree the Damascus, are strong, active and of good conformation. The demand for this breed of male goat from fellaheen is good and it is hoped to be able to meet to some extent next year's applications for the loan of goats of this breed.

SCOTCH BLACK-FACE SHEEP.

62. This breed of sheep, introduced 2 years ago for experimental crossing with local ewes at Acre Stock Farm, has proved to be unsuitable. 8 ewes and 2 rams were acquired but they cannot be acclimatised. During the summer and autumn months they have shown signs of great distress and there is no doubt that had they been left out in the fields they would have succumbed.

The half-bred lambs, although of better conformation than the local lamb, do not thrive and grow so well and, again, are not standing up to the climatic conditions of this country.

KARAKUL SHEEP.

63. In June, 1934, three pure bred Karakul rams were acquired from the Stock Breeding Institute of the University of Halle, Germany. They arrived safely at Acre Stock Farm and settled down very quickly, showing little signs of being affected by the heat during the hottest days of the year. They were active and lively in August and tupped 29 local selected ewes (Awasi) resulting in 25 lambs.

The first cross-bred lambs are all well fleshed, active and healthy, and thrive excellently. Their reaction to the "Khamseen" hot weather on pasture unprotected from the direct rays of the sun and scorching winds was remarkable. They continued to graze unperturbed or distressed which indicates that they should acclimatise well.

All ram lambs were slaughtered on the day of birth skinned and the skins shade-dried and later, packed flat for submission to the Imperial Institute for report as to their quality and fur value, undressed and dressed, with the object of ascertaining the possibility of providing a good class of lamb skin suitable and marketable for use as fur.

SWINE.

64. The demand from breeders for piglets, both male and female, is steadily increasing and it is not possible to supply all applicants.

The Yorkshire breed, which is the one maintained at Acre Stock Farm, has acclimatised well and the resulting progeny in the villages has given every satisfaction to breeders.

DONKEY AND MULE BREEDING.

65. Two West Highland Pony stallions were imported in October, 1934. So far, they have settled down in their new environment well. The object of using this breed for crossing with local "Kadish" mares is to obtain a thick-set, heavier boned, mare from which to breed later a good type of draught mule.

These stallions served several mares during the spring of 1935 and the results are awaited with interest. 11 Government Damascus and Cyprian jackasses stood at stud in the District where their services were freely used.

Premiums in respect of 15 selected jackasses in villages were granted. Other donkeys in such villages were castrated.

ARAB STALLIONS.

66. As last year, one of the two Arab stallions was stationed at Safad and the other at Acre.

There was a good demand from Asil (pure-bred) mare owners for the services of these two stallions.

CASTRATION OF VILLAGE MALE STOCK.

67. The sterilisation and castration of inferior and scrub male stock in the villages was continued and several private veterinary surgeons were temporarily engaged to assist Government Veterinary Officers during the castration season. 2,116 animals, of which 911 were bulls, 628 jackasses and 205 horses, were operated upon as compared with 1,457 animals castrated last season. More details are given in Appendix No. 15.

POULTRY INDUSTRY.

68. Poultry farming continues to develop and to progress despite the high costs of feeding stuffs and heavy imports of poultry and eggs.

Last year 57 million eggs valued at £P.105,633.- (customs import returns) and 1,032,000 live fowls valued at £P.103,000 (animal quarantine returns) were imported.

The prices at which such imported poultry and eggs were sold are much below those produced locally and it is feared that if some form of protection is not given to the local poultry industry, it will very soon not be in a position to compete for the local market.

GOVERNMENT POULTRY STATIONS.

69. 39,000 hatching eggs and 7,150 breeding fowls of light and heavy breeds of poultry were sold to farmers and villagers during the year.

The output at all Government Poultry Stations in hatching eggs, day-old and 6 to 8 weeks-old chicks was increased to meet demands.

The resulting crosses of the native hens with the heavy breed of fowls, particularly Rhode Island Red and Sussex, so far, are giving fair results.

The improvement of the local breed of fowl by selection has been continued at Acre Poultry Station and the results are encouraging; the selected flock yielding higher number and larger eggs than the ordinary unselected "Baladi" breed.

BEE KEEPING INDUSTRY.

70. This industry continues to expand and to develop rapidly. There are now approximately 14,000 bee hives as compared with 8,000 last year.

Owing to drought conditions, the honey crop, with the exception of the orange blossom crop, was 50% below normal necessitating artificial feeding of bees during wintering. To assist this young industry, Government, for the second year in succession, issued to registered bee-keepers duty-free sugar to the extent of 157 tons at cost price.

In pursuance of Government's policy to encourage modern bee-keeping in villages, the issue of bee-hive loans was continued. Over 1,300 bee hives with full equipment were issued to about 225 persons.

BEE DISEASES.

71. In control of foul brood of bees, modern bee hives were inspected and infected colonies of bees detected were destroyed and hives disinfected.

ADDITIONS TO, AND IMPROVEMENT OF, ACRE STOCK FARM AND AGRICULTURAL STATION'S BUILDINGS.

72. The main grain store was extended and the construction of sheep and goat shelter was commenced during the year. Three huts for the accommodation of 24 students attending short practical courses of instruction in poultry and bee-keeping and various branches of agriculture were erected together with dining and lecture rooms and kitchen.

Two poultry houses were built and various minor additions to, and improvements of, existing buildings completed.

COMMITTEE OF ANIMAL HUSBANDRY.

73. A meeting of this Committee was held in July at which the Chief Veterinary Officer, who is the Honorary Secretary, summarised the position regarding all proposals submitted to the General Agricultural Council by the Committee since its appointment.

IX. General.

ENUMERATION OF LIVESTOCK, 1934.

74. A third biennial enumeration of livestock was taken during July, 1934. Enumeration forms were distributed with the assistance of the Officers of the District Administration to all Mukhtars, Heads of Tribes, etc., and with instructions to complete them as accurately as possible within a prescribed period. These forms were then collected and compiled by the Headquarters staff of the Service. Statistical data of this enumeration are given in Appendix No. 16.

VISIT OF CHIEF VETERINARY OFFICER TO ROUMANIA AND BULGARIA.

57. The Chief Veterinary Officer visited Roumania and Bulgaria in January and toured those countries from the 4th to the 19th of the month in response to an invitation received by him from the Minister of Agriculture and State Domains of Roumania and the Minister of National Economy of Bulgaria, respectively, to visit various stud farms, veterinary teaching and research institutions; to become personally acquainted with their various breeds of livestock, the administration and construction of their abattoir and quarantine establishments and the conditions under which cattle are raised for the export trade, and to satisfy himself that their general arrangements for the export of cattle to Palestine are in accordance with the Regulations of the Government of Palestine.

VETERINARY LEGAL CASES.

76. During the year 17 cases were attended to by Veterinary Officers (as compared with 33 in 1933) of which 10 were cases of suspected poisoning in animals and 5 taking fish by dynamite.

MOVEMENT OF ANIMALS ACROSS FRONTIER.

77. An agreement, with the object of facilitating the movement of animals across the Syrian-Lebanese and Palestinian frontier, was concluded between His Excellency the High Commissioner of the French Republic for the States of the Levant under the French Mandate and His Excellency the High Commissioner for Palestine.

The agreement provides for free passage of certain animals on condition that the persons in charge of the animals carry identity cards and that the animals are marked each with a recognisable metal ribbon.

LEVANT FAIR.

78. The Veterinary Service participated in the Government Pavillion at the Levant Fair held at Tel Aviv in April, 1934. Diagrams, photographs, slaughter-house specimens of condemnations, various breeds of poultry raised by Government, etc..., were exhibited.

LEGISLATION.

79. Rules made under the Diseases of Animals Ordinance, 1926, during the period under review are shown in Appendix No. 17.

VETERINARY SURGEONS.

80. 11 persons, graduates of recognised Universities or Veterinary Schools, were granted licences to practise veterinary surgery and medicine in Palestine.

81. In conclusion, I desire to place on record my appreciation of the services rendered by the staff of the Veterinary Service and the work carried out by them during the year, and to express my thanks to officers of the District Administration, Palestine Police Force and other Government Departments for their cooperation and assistance.

(Sgd.) J. M. SMITH.

Chief Veterinary Officer.

25th May, 1935.

ANNEXURE 'A'.

GOVERNMENT VETERINARY LABORATORY

REPORT BY THE VETERINARY PATHOLOGIST.

I. GENERAL.

Substantial increase is again to be reported in all kinds of routine tests, examination of specimens submitted for diagnosis, etc., to which must be added new routine procedure rendered necessary by the discovery of diseases not previously known to exist in Palestine.

2. The number of herds accepted for regular testing under measures for the control of contagious bovine abortion has again increased, there being 64 herds now under control as against 54 at the beginning of the period. Regular testing necessary for the control and eradication of dourine by means of the complement fixation test have been continuously carried out and testing of mares intended for service by Government stallions and donkeys.

3. The Assistant Veterinary Pathologist was absent on vacation leave from 25.5.34 to 16.11.34.

4. The effect of close settlement and small holdings on the increase in the numbers and variation of specimens submitted for tests and diagnosis has been very marked. This increase will certainly continue as settlement proceeds, as each owner of stock is separately interested in his disease problems. In countries where farming areas are large this is not felt to the same extent and laboratory routine is of a different nature, being more confined to special diseases occurring in large herds and flocks.

II. ROUTINE.

5. A total of 27,192 specimens (not including slides and smears) have been received at the laboratory for examination in connection with routine diagnosis during the year. This in an increase of 2,989 and such increase naturally entails added work in washing, sterilisation, recording, etc. Sub-inoculations made in connection with diagnosis have been performed on :—

Guinea Pigs	.. ..	99
Rabbits	.. ..	336
Rats	.. ..	299
Fowls	.. ..	148
Pigeons	.. ..	251
Sheep	.. ..	24
Mice	.. ..	42
Dogs	.. ..	6
Pig	.. ..	1

Microscopical Examinations .

6. 3,492 slides from 1,432 field cases have been stained and microscopically examined. Appendix No. 21 shows the results of these examinations.

Contagious Bovine Abortion.

7. 20,461 agglutination tests of the blood of cattle for contagious bovine abortion have been performed in connection with control schemes. Of these, 160 have proved positive and 42 doubtful. 1,015 tests for private practitioners on behalf of persons wishing to purchase cattle free from the disease have been carried out. Of these, 149 proved positive and 14 doubtful. 552 tests of imported animals in Quarantine have also been performed with positive results in 29 cases. 3,545 agglutination re-tests have been performed in connection with the foregoing. Complement fixation tests are also applied when considered necessary and especially in the case of doubtful reactors. 214 of such tests have been performed during the year. Reactions which are finally considered doubtful have comprised only 0.23% of the total number of tests.

Dourine.

8. 3,607 animals have been subjected to complement fixation tests for dourine. Of these 109 proved positive i.e. 3.02%. All sera are however re-tested in order that there should be no possibility of technical error and the total number of tests have therefore amounted to 7,260.

Anthrax.

9. Material from 285 suspected cases of anthrax has been received of which 192 proved positive. This has entailed the microscopic examination of 577 slides and 182 precipitin tests of spleen pulp. Of the latter 76 proved positive.

Anti-Anthrax Serum.

10. A large quantity of this serum has been prepared. The primary intention in the preparation of this serum is as an aid to field staff in case of severe reactions to vaccination. Practising veterinary surgeons are however also supplied on payment of 150 mils per dose and the demand is increasing, and it is not at present possible with our present facilities to supply this serum for all purposes.

Bovine Mastitis.

11. 47 samples of milk from cows, sheep and goats have been examined with the following results :—

Streptococci	9
B. Pyogenes	1
B. Coli	1
Gram + ovoid. bacteria	3
An as yet unidentified bacillus causing Mastitis in cows, sheep & goats	12
Negative	21
	47

Epizootic Lymphangitis.

12. 2 suspected cases of Epizootic Lymphangitis have been confirmed by microscopical examination.

Fowl Typhoid.

13. Various types of the causal organism of fowl typhoid occur and the disease is widespread. The more virulent types have been found to occur in

the Northern District. The routine examination consists of blood and cultural or serological examination of femurs. From 255 femurs received 34 proved positive. A polyvalent vaccine is prepared and maintained for issue.

Fowl Cholera.

14. 52 blood films, 15 femurs and 5 fowls have been received from 29 cases of suspected fowl cholera and have been submitted to microscopical, cultural and other examination. 16 of these proved positive.

Foul Brood of Bees.

15. Routine microscopical and cultural examinations of foul brood of bees have been performed from 13 specimens of suspected comb with the following results:—

European Foul Brood	7
American Foul Brood	2
Sac Brood	1
Negative	3
	13

Fowl Pox & Diphtheria.

16. This disease, as in most countries, is indigenous. The demand for pigeon pox virus vaccine has greatly increased and poultry farmers in Syria are also applying for it.

Bovine Coccidiosis.

17. Only one positive case of bovine coccidiosis has been diagnosed and this disease does not as yet appear to be very prevalent.

Egyptionella Pullorum of Fowls.

18. Occasional fatal cases of this disease are met with but it still does not appear to be a cause of any serious loss.

Pulpy Kidney disease.

19. The existence of this disease in Palestine was discovered at the Veterinary Laboratory during the present period. Outbreaks have occurred in 5 flocks comprising some 1,200 sheep of which 78 are reported to have died. Diagnosis is effected by the injection of bowel filtrate into rats, mice and rabbits. 23 specimens have been received for examination with positive results in 7 cases.

Coccidiosis of Goats.

20. Some fatal cases of coccidiosis in goats occurred at the Stock Farm. Mortality from this cause has not previously been encountered.

Vaccines and Anti-sera.

21. The following vaccines and anti-sera have been prepared :—

Pigeon Pox Vaccine	88,950 doses
Fowl Typhoid Vaccine	16,570 "
Pulpy Kidney Disease Vaccine ..	13,400 c.c.
Anti-Anthrax Serum	54,774 c.c.
Staphylococcus Vaccine	275 c.c.
Various anti sera.	

III. Special Work.

22. A great deal of work on investigation is continually necessary on various peculiarities which arise in connection with routine measures if the accuracy of tests, standarisation, etc., is to be maintained. Definite research is also essential in the case of diseases newly discovered to exist, work on diseases the causes of which are still obscure and in extending knowledge of existing ones. In connection with this experimental and investigational work, 2,286 slides have been prepared, stained and microscopically examined.

Pulpy Kidney Disease (Entero Toxaemia) of Sheep.

23. The discovery of this disease in Palestine was chiefly brought about owing to intensive sheep rearing now carried on at several settlements. A number of deaths in sheep took place at the settlements of Tel Yoseph and Beit Alfa. Deaths occurred suddenly and at first anthrax was suspected but all material forwarded was found to be negative to this disease. In order that the cause might be ascertained, a recently dead sheep was forwarded by car to the laboratory — a journey of some five hours. By this time pulpy kidney disease was suspected and a preliminary diagnosis confirmed by the intravenous injection of a lamb with intestinal filtrate, which caused death in two hours. A considerable amount of research work was then undertaken to ascertain the type of B. welchii responsible, elaboration of routine diagnosis procedure and vaccine production. The results of this work were published in the Journal of Comparative Pathology and Therapeutics (December, 1934).

Tests for Diagnosis of Meat.

24. Anti-sera have been prepared for the diagnosis of meat from goats and camels in order to detect fraudulent substitution. Both precipitin and complement fixation tests are applied according to a revised technique.

Cell Inclusion Disease of Fowls.

25. Some severe outbreaks of this disease occurred during the year around Jaffa and at Jerusalem but no reports were received as to its occurrence in an acute form elsewhere. These outbreaks were however more extensive than on previous occasions; possibly on account of closer settlement, but as is usual with cell inclusion disease they subsided in some 6 to 8 weeks without the application of severe control measures such as restriction of movement of poultry. In these outbreaks a number of post mortem revealed lesions similar to fowl plague and the disease was once more closely studied in order to compare the differences. Certain differences between the diseases, both from a field or administration point of view, as well as in the laboratory, are sufficiently characteristic as to warrant a clear separation between the two, and the results of this work were published in the Journal of Comparative Pathology and Therapeutics (September, 1934). Beyond a few mild outbreaks, further cases have not been reported since July 1934.

Tick Fever Experiments.

26. As in previous years, this investigation was continued within the limits permitted by the present confined stable accommodation. Apart from calves locally purchased, three shorthorn heifers were imported from England and have been inoculated. The data collected in regard to these experiments since the previous series of experiments completed in 1927 have now been forwarded for publication in the Journal of Comparative Pathology and Therapeutics.

Coccidiosis in Sheep & Goats.

27. In view of the fatal cases which occurred in Stock Farm goats, a number of examinations were made of the foeces of sheep and goats from different localities. Coccidia were found to be frequently present in small numbers without apparent disturbance to health, but in the fatal cases were very numerous.

Calf Diphtheria.

28. An outbreak of a fatal disease affecting calves at one of the settlements was reported during the year, with a consequent mortality of over 70%. A sick calf which was forwarded for observation died and was found on laboratory examination to be suffering from calf diphtheria. Further specimens from a dead calf were also forwarded and similarly diagnosed both from the lesions and microscopical examination of sections.

White Scour (B. Coli).

29. Cultural examination of the organs of the calf found to be affected with B. necrophorus (Calf Diphtheria) and which died at the laboratory showed also a general infection with B. coli. This calf had suffered from diarrhoea prior to death. Other internal organs received from a further calf which had died at a settlement also proved positive for the same type of B. coli. It would appear therefore that at least in some of the cases calf diphtheria was associated with white scour.

No reports of the existence of these diseases have as yet been received from any other settlement.

(Sgd) S. J. GILBERT.
Veterinary Pathologist.

5th May, 1935.

ANNEXURE 'B'.

ACRE STOCK FARM AND AGRICULTURAL STATION.

REPORT BY THE MANAGER.

The Stock Farm has increased in size and the demands for improved male stock are becoming more numerous, proving that results already obtained have been appreciated.

Prison Labour.

2. The scheme of employing good-conduct prisoners continues to be a success and no undue trouble was experienced. As in the previous year, an average of 40 of these prisoners were employed daily in the different sections of the Farm. The majority of the prisoners worked at least six months and it has been found that, after their release, the period spent at the Farm has proved highly beneficial to them. The value of Prison Labour performed during the year was about the same as last year, approximately £P.650.

Farm Lands and Crops.

3. Due to yet another abnormal year, cereal crops were below average yields and grazing was very poor. The following quantities were grown on the Farm lands.

Barley	—	26,536 Kilos
Wheat	—	11,359 "
Oats	—	5,348 "
Maize	—	15,000 "
Hay	—	54,200 "

From the total area of 130 dunams under irrigation, approximately 600 tons of green food (green maize, lucerne and berseem) were produced.

Silage.

4. Green maize has again been used for silage, the pit method being used. It is proposed this year to utilize disused concrete water basins for production of silage on a larger scale.

Farm Machinery.

5. During the year the following machinery was acquired through the Crown Agents for the Colonies:—

1 Maize thresher.
1 Tibn cutter & bruiser.
1 Hay sweep.
1 Farm roller.

Buildings.

6. A side extension to the main store to house machinery, and sheep and goat sheds were added during the year.

Animal Strength.

7. The present strength of the Farm is 951 head, an increase of 257 over last year, as follows:—

Bulls	—	51
Cows	—	30
Bull calves	—	10
Heifer calves	—	8
Sheep	—	413
Goats	—	392
Pigs	—	11
Horses	—	10
Donkeys	—	19
Working animals	—	7
TOTAL	—	951

The details as to sex and breed, together with number purchased and born, are shown in Appendices Nos. 18 and 19.

8. The general health of the stock has been good. Ticks, at one time very numerous, have been greatly reduced by regular dipping of cattle, sheep and goats.

9. The following animals died or were destroyed during the year due to various diseases and unfitness for breeding:— 1 donkey mare, 16 ewes, 35 goats, 3 bull calves, 15 lambs, 20 kids, 1 sow, 2 rams, 1 heifer calf, 1 bull, 2 jack-foals, 1 cow, 1 mule and 1 mare.

Sale and Disposal of Stock.

10. The following animals were sold:—

Cows	—	6
Bulls	—	4
Calves	—	4
Piglets	—	87
Ewes	—	8
Rams	—	18
Lambs	—	16
Female Goats	—	7
Kids	—	4
Male Goats	—	4
Jackasses	—	1
Sow	—	1

and realized the sum of £P.288.460 mils.

As explained last year, the number of animals sold and prices realized would appear low, but it is the practice at present to sell only culled stock (with the exception of sheep, goats and pigs). All other stock are retained, as the Farm is not yet up to full strength.

11. Selected males of each breed have been distributed on loan for the breeding season, free of charge.

Distribution of Stud Animals.

12. *Bulls.* The demand has been again heavy and the results already obtained, encouraging.

For the 1934/35 breeding season, 33 Lebanese, 6 Boaz (Turkish) and 1 Kerry bull were used for services. 35 were distributed in the districts and 5 retained at the Farm for use of the villages near the Farm.

The bulls on loan have been in some cases fed by Government, but every endeavour is being made to encourage the villagers to feed Government bulls while under their charge.

Veterinary Officers have, as in the past, inspected the bulls from time to time and given advice as to deticking.

13. It is gratifying to know that villagers themselves now ask for castration of their male animals which is being undertaken by Veterinary Officers and this will greatly help in the general improvement of livestock.

14. It is estimated that in the villages approximately 2,000 cows have been served by Government bulls, while at the Farm 100 native cows have been served.

15. *Jackasses.* Of the 9 jackasses on the strength, 5 are Damascus and 4 Cyprian.

7 are stationed in the following Districts:—

Nablus	—	3
Beisan	—	1
Safad	—	1
Jerusalem	—	1
Tulkarm	—	1

while 2 are stationed at the Farm.

During the period, 300 services have been made, up to date 75% being for mule breeding.

The demand for jackasses for mule breeding is increasing yearly and it is proposed to purchase an additional 3 in Cyprus in a few months' time.

16. *Arab Stallions.* As last year, two Arab stallions only were available, one being stationed in Safad and one at the Farm.

During the season 60 services were made, but results are not yet to hand.

17. In November 1934, two stallions of the West Highland Pony Breed were imported and were stationed at the Farm, where they are proving popular, 20 mares having already been served.

This breed will be used to cross with the Kadish mare (impure Arab) and the resultant progeny crossed with a jackass for the production of a strong type of mule.

18. Services by stallions might have been greater if it were not for the dourine restrictions. All mares now coming for services have to be blood tested within one month of being served. Notwithstanding this, owners of mares realize the wisdom of the restrictions and are now bringing their mares for blood testing without undue pressure.

19. All classes of stock have been increased at the Farm which will soon be up to the full establishment laid down. As a result of the increase, more attention will be paid in future to the quality of the stock.

The Farm is now looked upon as a real assest to the country and applications for livestock and technical advice are increasing each year.

Cattle.

20. The small South Devon herd has not been found to be in favour and was sold to one farmer. The breed is too large for the Arab farmer and the Jewish settlements could not be persuaded to try out the breed.

21. The small Lebanese herd imported in 1932, now consists of 19 cows, 43 bulls and 12 calves.

The breed has proved very successful in that the animals resist tick fever. Only one case occurred in three years.

Their milking qualities are also far superior to the native cattle; the maximum yield being 3,100 kgs. This figure cannot be taken as the maximum yield of the breed, as cows at the Farm have only given 2 calves and are therefore not yet at their maximum.

22. In October, 1934, a small herd of Kerry cattle, consisting of 8 cows and 2 bulls was imported from England and 1 bull from the Sinai Province of Egypt. The cows were purchased in calf and so far, luckily, 5 bull calves have been born.

One Kerry bull was stationed at Safad. 96 cows have been served resulting in 70 pregnant cows. The cows are now only calving down and up to date some good calves have been born.

Milk records of all cows are taken daily with the object of selecting and breeding only from the best cows at a later date.

23. The six bulls of the Boaz (Turkish) breed were used for Hill Arab villages where the villager pays more attention to strong working oxen rather than to milk production.

Sheep.

24. *Awasi.* The flock now consists of 209 breeding ewes, 49 rams, 59 ram lambs and 53 ewe lambs.

The breeding ewes include 55 born on the Farm during 1933. The number of rams has also been augmented by 36 reared here.

Division into small flocks of ewes, each headed by a separate sire, was continued with a view to increasing the revenue and utility of local sheep be selection within the breed.

The basis of selection was size and constitution. Larger ewes giving a quicker and bigger weight increase to early maturing lambs, higher milk yield, and more manure production per unit.

25. In order to increase the ruggedness and size of rams for distribution, they were allowed to suck until 3 months of age, ensuring a sound foundation. The condition of such lambs on weaning is very satisfactory.

This system is also followed with the ewe lambs so as to improve the all-round standard of the flock in conjunction with judicious culling.

26. Suitable Awasi ewes of those which had been mated to the Karakul breed (mentioned under another heading) are being recorded for milk yields after having their male cross progeny killed at one day of age.

27. Karakuls on hand are 3 high class 'A' quality rams, imported from Germany, and 1 ram and 1 ewe — from Roumania. The Roumanian Karakul ewe had a good quality ram lamb by one of the imported German rams.

Karakul cross Awasi ewe lambs — 14
Karakul cross Awasi ram lambs — 12.

28. The Karakul is essentially a true haired breed and as the Awasi coat consists of a mixture of hair and wool, the 1st cross pelts already indicate a combination between these two hairy factors; the Karakul sires also infusing their colour and other characteristics.

29. Pelts will be sent to the Imperial Institute, London, to be reported on for curl formation, quality of hair, lustre, density, price valuation, etc...

30. The fat-tail of the Karakul makes it eminently suitable for Palestine conditions where there is a shortage of food during 3 months of the year, sustenance being drawn from the fat, stored up in the tail, during periods of scarcity.

31. The imported Karakuls on this Farm have acclimatised exceptionally well.

So far, the crosses are thriving under the identical conditions (pasture etc.) as is meeted out to the local flock. Regular comparative weighings show them (the crosses) to be on a par.

32. Two Dorset Horn rams and two cross Dorset Horn rams were presented by Colonel Bailey. The rams arrived after the mating season and will be tried out this year.

33. A further 8 Scotch Blackface cross Awasi lambs and 1 pure bred Blackface ram lamb were born. The pure bred ewes and lambs had to be kept in-doors continually during the hot weather, as they were unable to graze due to the intense heat.

The Blackface—Awasi cross lambs are quite normal up to 2 months of age, i.e. during cool weather, but as soon as there is an appreciable rise in temperature, they lag behind the flock, feed indifferently and loose condition. They find the "Khamseens" very trying and have to be specially accommodated.

Damascus Goats.

34. The goats comprise of 52 females, 35 bucks, 21 buck kids and 22 female kids.

Here again the policy of splitting up in families to test out different sires with a view to improving the breed is adopted.

Some of the billies born locally will be fit for distribution this year. They are well grown and strong for their age and compare very favourably with those imported from Syria.

Coccidiosis was frequent amongst 1934 kids, but it was effectively stopped by the Veterinary Officer, Haifa. Thymol was used.

To date, the kids of this season are all free of this disease, Thymol being employed as a preventive measure.

Mamber Goats.

35. There are in all 262 of these goats. 116 are females, 46 female kids, 44 bucks and 56 buck kids.

The males have been moved to Manawat Sheep and Goat Hill Station and are doing very well under more natural conditions.

Pigs.

36. The demand for pigs has passed all expectations and difficulty was experineced in meeting the demand. 6 Middle White sows, 1 Large White boar and 1 Middle White boar are kept for breeding but this number will have to be increased to meet demands. It is intended to import this coming year 1 in-pig gilt and 1 boar of the Large White Yorkshire breed.

During the year 85 piglets at £P.1 each were sold to farmers for breeding.

Courses of Instruction.

37. The three month practical courses at the Farm have proved very popular. The number of students has had to be strictly limited to 30 a year, as the farm staff cannot spare more time to instruct large numbers.

38. Housing accommodation has been completed for 24 students and was fully occupied during the two fortnightly courses in Bee-Keeking — one for Arabs and one for Jews.

Visitors.

39. The Farm is open to inspection during the working hours and full advantage of this is taken by the general public. Difficulty is experienced in showing the numerous visitors over the Farm as the staff is fully occupied; but it is hoped that a guide will be appointed in the near future to undertake this work.

On Farmers' Day, 233 farmers, Arab and Jewish, visited the Station at Acre. They were shown all sections of the Farm and entertained to lunch, after which they were addressed by the High Commissioner.

(Sgd) B. M. CAMERON.

Manager.

15th May, 1935.

ANNEXURE 'C'.

POULTRY AND BEEKEEPING SECTION.
REPORT BY THE SENIOR POULTRY AND BEEKEEPING OFFICER.

Development of Poultry Farming in Jewish Settlements.

Poultry farming in Palestine is rapidly becoming a very important branch of agriculture. Mammoth electric incubators are in operation in many Jewish settlements and all are busily occupied hatching chicks, the demand for which was very large last year, when it was estimated that about a million were artificially hatched.

Development of Poultry Farming in Arab Villages.

In Arab villages, where primitive methods of poultry farming are still being practised, the poultry population has been greatly increased. The figures for 1934 show an increase of 338,471 birds over those for 1932. Approximately 75% of this increase occurred in Arab villages.

Imports of Eggs and Poultry.

Owing to the expanding urban population, the demand for poultry and eggs is increasing much more rapidly than production. The big imports of eggs and poultry are shown in Appendices Nos. 22, 23 and 24.

Development of Beekeeping.

Beekeeping too, is developing well. The numbers of modern beekeepers and modern hives have doubled in the last two years, and at the end of 1934, there were 347 beekeepers and 14,000 hives, as shown in Appendix No. 25. Government assistance in the form of bee-hive loans, courses in beekeeping, disease and pest control, duty-free sugar for bee-feeding, and general advice and instruction, have all stimulated development.

Possibilities for Beekeeping.

The extended area of orange plantations, and the introduction of new citrus varieties as grapefruit and Valencia, have enormously increased and improved the honey flow. It is estimated that over 60,000 bee colonies can find sufficient food on these honey plants, while wild honey plants can support an additional 50,000 bee colonies.

Functions of Government Poultry Stations and Apiaries.

Poultry Stations and Apiaries. There are 10 poultry and beekeeping stations, and 2 apiaries. Their main functions are breeding, acclimatisation, selection, experimentation, demonstration and distribution. The central station is at Acre, and occupies an area of over 100 dunams. The following activities are carried out at the Acre Station:—

1. *Acclimatization.* Seven pure breeds of fowl, one of turkeys, one of ducks, six of rabbits and two of bees were imported from reliable breeders in various parts of the world. The stock is being acclimatised, selected and bred for distribution to those farmers who are interested in keeping pure-bred stock or for crossing with native stock in order to improve the latter. The following breeds are under acclimatisation :

Fowl :	White Leghorn
	Black Leghorn
	Rhode Island Red
	Light Sussex
	White Wyandotte
	Australorp
	Barred Plymouth Rock.
Ducks :	Khaki Campbell.
Turkeys :	American Mammoth Bronze.
Rabbits :	Angora
	Chinchilla
	Castorex
	Chinrex
	Ermine
	Black.
Bees :	Italian
	Carniolan.

All these breeds have been acclimatised successfully and thrive satisfactorily both at the station and on the farms to which they have been distributed.

2. *Selection.* The work of selection at Acre station is being carried out very carefully. All pullets are trap-nested and only those passing the efficiency bar for production, possessing good stamina and being as near as possible to the standards in shape, size and colour, are permitted to enter the breeding pens and used as breeders.

3. *Pedigree work.* Highly accurate pedigree work is being carried out at the Acre station. Ancestry, progeny, sister and brother records embracing fecundity, quality of production, hatchability, rearability and health are being kept for all our breeding stock. Purchasers who desire pedigree information regarding stock procured by them are furnished with complete records at a nominal fee.

Record work, without which no reliable data on selection and acclimatisation can be obtained, is neccessarily very tedious and takes up a great deal of the attendants' time.

The demand for reliable stock from the Acre Poultry Station has been so high that this station has been able to supply only 10% of the demands.

In addition to the acclimatisation, breeding and selection work carried out on imported stock, local birds have also been improved as regards fecundity and size of egg, utilizing their adaptability to local conditions and their comparative immunity to local diseases. The results obtained in this work have been quite satisfactory and it is intended to commence the distribution of native stock improved by selection, next year.

The number of stock involved in all these operations amounts to over 2,000 fowls, 50 turkeys, 40 ducks, 50 rabbits and 200 bee swarms.

4. *Experiments.* The following experiments are in progress at present:—

A. *Building Materials for Poultry Houses.* Houses of the same pattern and size but of different building materials, namely wood, concrete and galvanized

metal sheets, have been constructed. The houses are populated with pullets of the same grade, breed and age, and the effect of the various building materials on production, consumption, fertility and hatchability, health and vitality of the stock are recorded in order to determine the comparative influence of the materials of these houses upon their inhabitants. Maximum and minimum temperatures are also registered daily in all experimental houses.

This experiment has been conducted during the past four years and final data and conclusions will be available at the end of next year. From preliminary data, the galvanized metal house which is more economical in cost of construction, can be built of a knock-down and movable pattern, is as suitable a poultry house as those built of other materials and would appear to be the most favourable.

B. *Types of Poultry Houses.* Houses of various design such as open-front, semi-monitor, gable roof and slatted floor are being tested with a view to finding the most comfortable and practical type of rearing and laying house for this country.

C. *Types of Poultry Yards.* A house, 21m x 5m floor space has been divided into three 7m x 5m sections. One of these sections opens into a concrete yard 5m x 10 m, the second into a similar yard with a wire netting floor, and the third has no yard at all. Birds of the same breed and grade are accommodated in all 3 sections and data is collected concerning their health, vitality, production and consumption, in order to find the effect of the different yarding methods on the fowls. Similar houses 8m x 5m are located one on each side of this house; large double yards are adjoined and the birds are allowed to run freely in them. The yards are continually alternated, one being used as a range while the second is ploughed and sown with barley or maize, etc.. In this manner, the yards are kept fresh and the birds are provided with fresh green-food. The production of fowls populating these two houses is being compared with that obtained in the large house. Thus it is expected to ascertain the influence of the various methods of yarding on fowls.

D. *Feeding Experiments.* 14 pens, each possessing 30 White Leghorns of the same age and parentage, are being fed fourteen different rations. The object of this experiment is to ascertain the most suitable and economic rations to be fed for a maximum production of eggs. 7 pens are used specifically to ascertain the comparative values of the different levels and qualities of protein supplements in the laying mash, while the other 7 are used to compare the values of various grain mixtures. The following is an outline of the 6 experiments in feeding carried out at the Acre Poultry Station:

(a) To ascertain the different levels of protein supplements in the laying mash.

Pen No.	
30	20 parts animal protein with basal mash.
31	15 d i t t o
32	10 d i t t o
33	5 d i t t o

(b) To ascertain the different levels of protein supplements in the laying mash with animal and vegetable proteins.

Pen No.	
34	5 parts animal protein + 5 parts cake + 5 parts lentils.
35	10 d i t t o
36	15 d i t t o

In these two experiments, basal mash is fed ad lib. The animal protein consists of equal parts of fish and meat meal, both of which contain 60% protein.

(c) To compare the values of different grain mixtures.

Pen No.				
37	Wheat	100	parts.	
38	"	50	"	+ durra 50 parts.
39	"	50	"	+ maize 50 parts.
40	"	33.3	"	+ maize 33.3 " + durra 33.3 parts.
41	"	33.3	"	+ maize 33.3 " + barley 33.3 parts.

Standard mash is fed ad lib. and grain in above mixtures at 50 grams per bird daily.

(d) Comparison of sprouted grain and dry mash with dry grain feeding in experimental pen 41.

Pen No.	
42	Sprouted grain 50 grams per bird + standard dry mash ad lib.

(e) Comparison of whole mash feeding with mash and grain feeding.

Pen No.	
43	Standard dry mash ad lib. No grain.

The basal mash consists of :—

20 parts bran.
20 " middlings.
20 " barley meal.
20 " durra or maize meal.
2 " bone meal.
2 " sea shell.
1 " salt.

The standard mash consists of :

The basal mash + 15% animal protein, fish and meat meal.

The consumption of food, egg production (number and weight) monthly body weight of hens, sickness and mortality are all carefully recorded.

In order to ascertain the effect of the above-mentioned rations on the fertility and hatchability of eggs produced, samples of eggs are collected from all pens at the same time and incubated in the same incubator in pedigree cages. Detailed records concerning the performance of the various groups of eggs are registered.

These experiments have been in progress for two years, and some of the results are already very promising.

E. *Time of Incubation.* In order to find the most suitable time of incubation in this country from an economic point of view (considering not only hatchability and rearability, but also production of pullets), hatches are turned out weekly from November to April inclusive. Approximately the same number,

kind and quality of eggs are used, and the fertility, hatchability and rearability of chicks produced are recorded. The chicks reared are weighed weekly and their cost of production (food, heating, etc.) is also recorded. In recording the production of pullets, their precocity and molts, the quantity, quality and value of eggs are all noted. Thus it is expected to be able to find the most suitable time of incubation in this country.

F. *Methods of Rearing.* Chicks hatched in incubators are divided into 3 equal parts; one is reared in battery brooders up to 3 or 4 weeks and from then to 8 weeks under hovers, the second is reared entirely under hovers on wire netting floors and sun porches with similar floors, and the third is reared on concrete floors and sand yards.

G. *Poultry Utensils Experiments.* Poultry mash hoppers, drinking fountains and trap-nest fronts of various design and construction are under careful observation. Particular attention is being given to this experiment in order to determine the best hygienic, labour and food-saving equipment.

H. *Bee-Feeding Experiments.* Three methods of bee-feeding are being compared, namely: entrance, top and bottom feeding. From available data, not yet complete, it would appear that the bottom board method of feeding is the most desirable.

I. *Single and Double-Walled Hives.* Hives of Buckeye double-walled pattern are being compared with Root single-walled hives. Both hives are of the same internal size and shape, differing only in that the one is built with 2 walls separated by dead air space, and the other is walled with a single board 7/8″ in thickness. Two thermometers are placed in one hive of each pattern under observation, the bulb of the one reaching the centre of the hive and that of the other resting between the wall and the first frame. Temperatures are registered 3 times daily, at 8 a.m., 12 noon, and 5 p.m. Both hives are mounted on weighing machines and their weights recorded daily at 8 a.m. This work has been in progress for three years and the data obtained are now being analysed, and compiled under the supervision of Professor Bodenheimer of the Hebrew University. While analysing this material, it was found advisable to extend this experiment to other localities of the country, and to install double and single-walled hives equipped with thermometers and mounted on weighing machines, in the ten Government apiaries in addition to three private apiaries located at various altitudes from Jericho, 250m below sea level, to Safad, 1000m above sea level. In this manner, a complete picture of the behaviour of bee colonies in double and single-walled hives located at various altitudes, and the influence of both types of hives upon the biology of bees, will be obtained.

J. *Bee Pollination of Oranges.* There exists a great deal of controversy regarding the beneficial value of bees in pollinating orange blossoms. In order to clear up any possible doubt, an experiment in orange pollination was arranged. 10 pairs of orange trees, each pair as much alike in size, age, vigour and general appearance as possible, were carefullly selected. 5 pairs of these were budded on khushkhash, the other 5 on lemon. Just before blossoms apeared, one tree in each pair was made bee-tight by covering it with a tent of mosquito netting stretched over a wooden frame and kept covered until they had all fallen off. The crops of each tree were harvested separately, counted and examined for the number of seeds. The results indicate that bee pollination increases the orange crop by more than 50%. The fruit thus pollinated was smooth in skin and much more attractive than the fruit of the covered trees (i.e. non bee-pollinated), which were rough skinned and over-sized. Seeds were more numerous in the former case, but not too many so as to affect the marketing of the fruit. A full report of this experiment is under preparation at present.

District Poultry Stations.

The District Poultry Stations are established primarily to serve Falaheen and Bedu who are interested in poultry farming and who are willing to improve their flocks and the management of them. Stations are located at places easily approachable for this class of farmers, namely, at Hebron, Beersheba, Gaza, Majdal, Nablus, Beisan, Farradiya, Safad and Jerusalem. Each station is in possession of a flock of 150—200 hens of 2 or 3 pure heavy breeds, in addition to a 300-egg incubator, brooders and 10 bee hives.

The activities of these stations comprise the distribution of hatching eggs, day-old chicks and broody hens to farmers at low prices, for the purpose of improving their stock, and the demonstration of improved methods of poultry farming. Those who are interested in improving their methods of management, can visit the stations at any time and observe proper methods of poultry farming and beekeeping.

The distribution of hatching eggs, day-old chicks, broody hens, breeding fowls, bee-swarms etc., increases from year to year. Last year, 2,000 breeding fowls, 5,600 day-old chicks, 39,000 hatching eggs and 300 bee-swarms were issued, as shown, in Appendix No. 26.

2 poultry houses, containing 100 birds each, were added to the Acre Station last year, one for native birds and the other for Rhode Island Reds. Cockerel sheds have been completed, thus raising the total number to 20 pens with accommadation for 300—400 cockerels.

One poultry house of 50-hen capacity has been added to each of the District Poultry Stations.

At Sarafand a 100-hive apiary was established to study the special problems of beekeeping in the orange belt, to demonstrate rational methods of beekeeping, and to supply selected queens and bee-swarms to beginners in beekeeping in this area.

Subsidiary Measures.

The following subsidiary measures were employed by Government last year, to promote poultry and bee-farming in this country:

(a) 130 tons of sugar for bee-feeding were imported from Egypt duty-free, and distributed to beekeepers at cost price.

(b) 60 kgs. Cyano gas powder were distributed free of charge to bee-keepers for the destruction of hornets.

(c) 5 temporary Bee-Inspectors were appointed to inspect modern hives for foul brood diseases, in order to eradicate this malady from the apiaries.

(d) £P.1500 were distributed as loans among farmers who desired to establish apiaries but who had no means to do so. These loans are repayable in 3 years.

(e) Wax imported for the manufacture of artificial comb foundation was exempted from customs duty.

(f) Fish and meat meal for poultry feeding, were also exempted from customs duty, in order to reduce the cost of poultry feeding.

(Sgd) ALEX LIVSHUTZ.
Senior Poultry and Beekeeping Officer.

APPENDIX No. 1.

INCIDENCE OF ANTHRAX.

Veterinary District	Outbreaks	Animals Involved	Deaths	Animals Vaccinated
Jerusalem	15	2,078	57	2,021
Jaffa	8	1,019	13	1,006
Nablus	10	1,966	135	1,831
Haifa	10	2,785	150	2,635
Tiberias	28	7,456	183	7,273
Safad	—	—	—	—
TOTAL	71	15,304	538	14,766

SUMMARY FOR 5 YEARS.

1930	48	7,261	141	5,369
1931	60	6,297	181	8,025
1932	72	24,066	391	25,973
1933/34	106	34,626	1,075	35,632
1934/35	71	15,304	538	14,766

APPENDIX No. 2.

INCIDENCE OF MANGE.

Veterinary District	Number of Examinations made				Animals found diseased				Stables disinfected
	Horses	Mules	Donkeys	Camels	Horses	Mules	Donkeys	Camels	
Jerusalem	696	693	5,773	2,054	5	2	1	61	63
Jaffa	1,535	1,635	6,278	6,241	1	—	—	33	16
Nablus	6,933	4,616	24,953	8,213	3	1	1	139	97
Haifa	120	78	260	83	—	—	—	—	—
Tiberias	6,256	5,299	6,626	2,016	9	—	—	16	25
Safad	756	130	1,134	239	34	—	2	—	30
Total	16,296	12,451	39,024	18,846	52	3	4	249	231

SUMMARY FOR 5 YEARS.

1930	10,442	5,184	27,132	15,138	13	5	16	243	214
1931	13,596	7,569	32,706	20,964	13	7	35	280	221
1932	14,338	8,746	33,524	20,090	19	—	30	92	96
1933/34	14,390	8,373	43,369	25,477	29	4	15	392	217
1934/35	16,296	12,451	39,024	18,846	52	3	4	249	231

APPENDIX No. 3.

INCIDENCE OF RABIES.

Veterinary District	Dogs	Cats	Other Animals	Total
Jerusalem	7	1	2	10
Jaffa	43	6	4	53
Nablus	16	—	2	18
Haifa	9	8	6	23
Tiberias	15	3	4	22
Safad	10	4	2	16
TOTAL	100	22	20	142

SUMMARY FOR 5 YEARS.

1930	24	9	12	45
1931	67	13	16	96
1932	125	16	24	165
1933/34	91	16	11	118
1934/35	100	22	20	142

APPENDIX No. 4.

CONTROL OF RABIES.

DESTRUCTION OF DOGS, CATS AND JACKALS.

Sub-District	Municipal and Local Council Areas.		Rural Areas.			Total
	Dogs	Cats	Dogs	Cats	Jackals	
Jerusalem	1,503	69	693	32	84	2,381
Ramallah	160	3	170	40	40	413
Hebron	165	—	392	112	80	749
Bethlehem	118	15	41	—	—	174
Jericho	45	19	126	—	—	190
Jaffa	2,104	1,873	604	4	299	4,884
Ramle	188	2	859	1,135	- -	2,184
Gaza	577	2	342	—	35	956
Beersheba	—	—	90	—	16	106
Nablus	164	—	64	—	245	473
Tulkarm	96	—	515	—	—	611
Jenin	120	81	655	4	284	1,144
Haifa	1,194	852	608	—	32	2,686
Acre	142	—	287	—	—	429
Nazareth	397	49	830	4	—	1,280
Beisan	343	48	382	—	—	773
Tiberias	207	21	460	—	- -	688
Safad	110	133	988	—	—	1,231
TOTAL	7,633	3,167	8,106	1,331	1,115	21,352

Note: Of the total number of animals destroyed, about 4,000 were shot by Police Constables accompanying veterinary personnel.

SUMMARY FOR 5 YEARS.

Year	No. of Animals
1930	20,451
1931	21,466
1932	29,433
1933/34	10,640
1934/35	21,352

NUMBER AND KIND OF ANIMALS PASSED THROUGH ANIMAL QUARANTINE STATIONS.

Animal Quarantine Station	Horses	Mules	Donkeys	Camels	Cattle		Sheep	Goats	Pigs	Total	Poultry	Quarantine Revenue LP. Mils
					Male	Female						
Haifa	104	940	773	—	17,277	1,238	145,280	90,763	185	256,560	27,641	10,316.812
Ras en Naqura	—	—	—	—	—	—	—	—	—	—	145,852	155.922
Manawat	44	134	4	—	62	3	860	53	—	1,160	170	28.550
Jish	248	138	108	409	599	660	497	2,929	55	5,643	46,047	255.296
Buweiziya	24	53	12	558	1,237	1,480	2,766	3,118	—	9,248	22,319	315.039
Jisr Banat Ya'qub	415	61	18	455	63	90	1,155	293	—	2,550	232,204	332.838
Samakh	374	48	17	8,644	695	149	26,806	3,244	68	40,045	63,521	1,096.717
Jisr Majami'	13	6	2	247	384	245	1,909	404	—	3,210	2,743	113.441
Jisr Sheikh Husein	28	12	7	261	1,054	1,094	2,649	2,280	—	7,385	1,357	317.545
Jisr Damiya	—	—	—	13,783	148	188	3,411	4,180	—	21,710	20	723.620
Allenby Bridge	42	4	—	446	583	296	22,139	6,295	—	29,805	465,359	1,167.475
Hebron	—	—	—	36	17	2	2,721	1,509	—	4,285	—	85.350
Beersheba	—	—	—	721	—	—	4,865	1,930	—	7,516	—	167.470
Gaza	3	—	24	202	—	—	132	115	—	476	25	15.935
Khan Yunis	3	—	—	76	—	2	329	183	—	593	78	34.954
*Interior Control Posts	—	—	—	300	2	—	—	300	—	602	24,632	659.492
TOTAL	1,298	1,396	965	26,138	22,121	5,447	215,519	117,596	308	390,788	1,031,948	15,786.456

SUMMARY FOR 5 YEARS.

1930	989	682	471	18,115	6,978	1,650	152,322	56,369	33	237,609	**	8,822
1931	782	475	407	9,413	7,993	1,603	180,018	59,955	37	260,683	140,416	7,742
1932	702	876	661	7,155	8,255	2,952	130,753	69,299	61	220,714	279,971	6,433
1933/34	1,020	1,580	1,244	19,287	16,082	6,194	165,814	93,317	—	304,538	423,058	9,945
1934/35	1,298	1,396	965	26,138	22,121	5,447	215,519	117,596	308	390,788	1,031,948	15,786

* Jerusalem, Jaffa, Nablus, and Tulkarm.

** Not subject to Animal Quarantine Rules.

APPENDIX No. 6.

NUMBER AND KIND OF TRANSPORT ANIMALS* PASSED THROUGH ANIMAL QUARANTINE STATIONS.

Animal Quarantine Station	Horses	Mules	Donkeys	Camels	Total
Ras en Naqura	2	—	34	29	65
Manawat	—	3	3	2	8
Jish	239	234	919	167	1,559
Buweiziya	196	409	938	237	1,780
Jisr Banat Ya'qub	106	181	195	181	663
Samakh	216	52	682	455	1,405
Jisr Majami'	211	70	630	729	1,640
Jisr Sheikh Husein	1,155	160	3,415	1,380	6,110
Jisr Damiya	47	16	254	75	392
Allenby Bridge	274	164	1,850	321	2,609
Hebron	1	32	75	3	111
Beersheba	1	1	4	85	91
Gaza	1	—	—	60	61
Khan Yunis	2	—	38	1,058	1,098
** Interior Control Posts.	11	7	26	131	175
TOTAL	2,462	1,329	9,063	4,913	17,767

SUMMARY FOR 4 YEARS.

1931	1,648	950	10,631	6,116	19,345
1932	1,820	914	10,975	8,979	22,688
1933/34	2,024	1,193	9,583	5,579	18,379
1934/35	2,462	1,329	9,063	4,913	17,767

* "Transport animal" means any riding, pack or draught horse, mule, donkey or camel engaged in transport across any frontier.

** Jerusalem, Jaffa, Nablus and Tulkarm.

APPENDIX No. 7.

CATTLE, SHEEP AND GOATS (BY COUNTRIES) IMPORTED BY SEA THROUGH HAIFA QUARANTINE STATION.

Country	Cattle	Sheep	Goats.
Austria	59	—	—
Bulgaria	9,097	906	495
Cyprus	389	—	—
Germany	503	15	1
Great Britain	10	—	—
Holland	23	—	—
Roumania	8,214	2,799	1,048
Syria	66	2,417	15
Turkey	154	139,143	89,204
TOTAL	18,515	145,280	90,763

SUMMARY FOR 4 YEARS.

1931	6,870	10,768	1,589
1932	6,148	40,284	25,041
1933/34	10,206	94,986	63,671
1934/35	18,515	145,280	90,763

APPENDIX No. 8.

EXPORT AND IMPORT OF HIDES & SKINS.

Year		Cattle No.	Sheep No.	Goats No.	Camels No.	Buffaloes No.	Total No.
1930	Export	29,176	135,658	90,766	483	—	256,083
	Import	9,414	4,147	1,857	69	7,774	23,261
1931	Export	33,838	142,446	77,861	1,141	139	255,425
	Import	4,584	2,067	—	—	6,912	13,563
1932	Export	57,094	46,785	44,245	1,515	138	149,777
	Import	4,788	2,006	3,700	333	12,521	23,348
1933/34	Export	45,335	124,788	144,024	1,881	384	316,412
	Import	5,269	13,136	2,351	212	11,338	32,306
1934/35	Export	30,977	122,457	121,758	1,041	43	306,276
	Import	1,537	2,143	4	—	40	3,724

STOCK SLAUGHTERED IN SLAUGHTER HOUSES.

Slaughter House	Cattle	Sheep	Goats	Camels	Pigs	Total
JERUSALEM DISTRICT	14,541	54,814	46,665	182	152	116,354
Jerusalem	13,701	37,211	24,835	63	145	75,955
Hebron	43	5,659	10,378	84	—	16,164
Ramallah	207	4,037	1,219	—	—	5,463
Bethlehem	207	3,704	5,376	32	4	9,323
Beit Jala	293	1,421	2,160	2	3	3,879
Beit Sahur	20	431	1,106	—	—	1,557
Jericho	26	1,901	1,132	1	—	3,060
Bira	44	450	459	—	—	953
SOUTHERN DISTRICT	32,261	68.195	28,358	753	150	129,717
Jaffa	384	42,326	13,100	63	134	56,007
Tel Aviv	24,009	876	160	—	—	25,045
Lydda	13	3,345	2,357	60	—	5,775
Ramle	117	5,003	6,172	—	16	11,308
Petah Tiqva	2,849	—	—	—	—	2,849
Rehovot	1,946	—	—	—	—	1,946
Rishon le Tsiyon	964	—	—	—	—	964
Ramat Gan	1,558	—	—	—	—	1,558
Gaza	241	9,471	4,188	112	—	14,012
Majdal	64	3,259	961	212	—	4,496
Beersheba	16	1,818	758	87	—	2,679
Khan Yunis	43	1,257	342	87	—	1,729
Faluja	57	840	320	132	—	1,349

Slaughter House	Cattle	Sheep	Goats	Camels	Pigs	Total
NORTHERN DISTRICT	8,363	70,057	27,550	10	361	106,341
Haifa	4,165	28,035	10,760	—	344	43,304
Acre	467	6,439	972	—	1	7,879
Hadera	755	—	—	—	—	755
Zikhron Ya'aqov	332	—	6	—	—	338
Tarshiha	—	41	727	—	—	768
Bassa	—	—	—	—	—	—
Rama	—	16	343	—	—	359
Kafr Yassif	—	4	161	—	1	166
Shefa Amr	11	698	168	—	4	881
Nablus	21	12,590	3,260	—	—	15,871
Tulkarm	23	5,029	1,091	3	—	6,146
Jenin	2	1,878	—	—	—	1,880
Qalqiliya	22	882	845	—	—	1,749
Tiberias	880	1,965	3,308	—	—	6,153
Nazareth	431	5,464	1,260	—	10	7,165
Beisan	10	2,648	795	2	—	3,455
Samakh	146	973	996	2	—	2,117
Affula	324	—	—	—	—	324
Mujeidal	4	143	17	3	—	167
Saffuriya	19	336	315	—	—	670
Safad	751	2,916	2,526	—	1	6,194

SUMMARY.

	Cattle	Sheep	Goats	Camels	Pigs	Total
Jerusalem District	14,541	54,814	46,665	182	152	116,354
Southern District	32,261	68,195	28,358	753	150	129,717
Northern District	8,363	70,057	27,550	10	361	106,341
GRAND TOTAL	55,165	193,066	102,573	945	663	352,412

STOCK SLAUGHTERED IN SLAUGHTER HOUSES.
SUMMARY FOR 5 YEARS.

APPENDIX No. 10.

Year	Cattle	Sheep	Goats	Camels	Pigs	Total
1930	20,706	149,254	79,918	322	570	250,770
1931	23,419	187,728	60,734	410	516	272,807
1932	41,132	146,274	87,987	646	784	276,823
1933/34	54,207	157,540	93,748	882	749	307,126
1934/35	55,165	193,066	102,573	945	663	352,412

APPENDIX No. 11.

RECORD OF CONDEMNATIONS AT THE SLAUGHTER HOUSES OF JERUSALEM, HAIFA, JAFFA & TEL AVIV.

		CARCASES			QUARTERS			LUNGS, LIVERS & OTHER ORGANS			APPROXIMATE WEIGHT IN KILOS		
		Cattle	Sheep	Goats	Cattle	Sheep	Goats	Cattle	Sheep	Goats	Cattle	Sheep	Goats.
Jerusalem	1932	46	1	1	49	—	—	4,019	4,637	1,260	19,150	2,309	623
	1933/34	42	1	3	20	—	—	5,834	4,492	1,492	16,846	2,611	914
	1934/35	62	8	1	25	—	—	7,211	3,981	1,232	21,677	2,564	800
Haifa	1932	23	37	7	78	2	69	512	5,029	2,929	6,032	6,008	3,548
	1933/34	30	30	12	34	—	10	446	7,537	2,610	5,436	7,860	2,992
	1934/34	64	23	4	52	—	6	551	10,343	3,773	6,476	10,269	3,187
Jaffa	1932	3	4	1	2	3	2	222	5,923	931	1,112	3,629	649
	1933/34	2	3	—	3	55	118	328	9,934	3,710	1,221	6,316	2,650
	1934/35	1	1	—	—	71	298	268	13,358	5,760	784	6,665	4,573
Tel Aviv	1932	93	6	2	6	—	—	2,189	169	23	9,404	54	8
	1933/34	285	2	—	2	—	—	3,302	137	5	22,689	82	1
	1934/35	215	—	—	2	—	—	4,414	162	—	20,941	60	—
TOTAL	1932	165	48	11	139	5	71	6,942	15,758	5,143	35,698	12,000	4,828
TOTAL	1933/34	359	36	15	59	55	128	9,910	22,023	7,817	46,192	16,869	6,557
TOTAL	1934/35	341	32	6	79	71	304	12,444	27,844	10,765	49,878	19,558	8,560

APPENDIX No. 12.

VETERINARY SERVICE TO POLICE.

	Attendances to police animals	Horses examined prior to purchase	Horses examined for casting	Boards of Enquiry attended.
JERUSALEM DISTRICT:	330	86	25	28
Jerusalem Division	286	74	19	18
Hebron "	44	12	6	10
NORTHERN DISTRICT:	682	67	24	30
Haifa Division	178	18	13	10
Acre "	44	1	1	1
Nazareth "	327	30	7	11
Safad "	133	18	3	8
SOUTHERN DISTRICT:	324	69	24	65
Jaffa Division	123	34	10	34
Ramle "	91	21	8	26
Gaza "	110	14	6	5
NABLUS DISTRICT:	284	71	24	39
Nablus Division	157	56	12	26
Tulkarm "	56	10	10	6
Jenin "	71	5	2	7
BEERSHEBA DISTRICT:	30	49	21	11
GRAND TOTAL	1,650	342	118	173

SUMMARY FOR 5 YEARS.

1930	1,840	361	68	110
1931	1,970	450	103	139
1932	1,839	386	75	143
1933/34	1,715	489	105	146
1934/35	1,650	342	118	173

RECORD OF DISPOSAL OF POLICE HORSES.

Police District	Deaths		Destructions		Sales		Total	
	No.	Percentage to District Strength	No.	Percentage to District Strength	No.	Percentage to District Strength	No.	Percentage to District Strength
Northern District (231)	10	4.3	11	4.8	9	3.9	30	13.0
Jerusalem District (101)	2	2.0	10	10.0	1	1.0	13	13.0
Southern District (78)	13	16.7	2	2.6	6	7.7	21	27.0
Nablus District (109)	6	5.5	12	11.0	7	6.4	25	22.9
Beersheba District (130)	1	.7	5	3.8	6	4.7	12	9.2
TOTAL (649)	32	4.9	40	6.2	29	4.5	101	15.6

SUMMARY FOR 5 YEARS.

1930	27	4.0	21	3.1	11	1.6	59	8.7
1931	25	4.0	26	4.2	36	5.8	87	14.0
1932	33	5.3	25	4.0	43	6.9	101	16.2
1933/34	24	3.5	29	4.3	23	3.4	76	11.4
1934/35	32	4.9	40	6.2	29	4.5	101	15.6

Appendix No. 14.

ESTIMATED ANNUAL PRODUCTION OF WOOL IN PALESTINE.

Year	Quantity in Kilos
1930	473,311
1931	422,552
1932	473,460
1933	441,874
1934	494,371

Appendix No. 15.

CASTRATION OF VILLAGE STOCK.

Veterinary District	Bulls	Calves	Sheep & Goats	Lambs & Kids	Horses	Donkeys	Others	Total
Jerusalem	224	—	—	40	10	158	6	438
Jaffa	20	13	—	1	6	14	2	56
Nablus	151	114	5	135	1	13	8	427
Haifa	50	—	—	—	39	130	35	254
Tiberias	156	2	—	—	117	301	29	605
Safad	173	8	103	—	32	12	8	336
TOTAL	774	137	108	176	205	628	88	2,116
TOTAL FOR 1933/34	513	190	332	214	65	97	46	1,457

(Based on returns renedered by Mukhtars in July, 1934)

TABLE I

SUMMARY BY SUB-DISTRICTS.

SUB-DISTRICT	Horses	Mules	Donkeys	Camels	Cattle	Buffaloes	Sheep	Goats	Total (excluding Poultry)	Poultry
PALESTINE.	**16,355**	**7,481**	**75,784**	**32,033**	**130,804**	**4,540**	**188,267**	**380,511**	**835,775**	**1,510,518**
Jerusalem-Bethlehem-Jericho	345	1,074	3,626	503	5,405	29	5,885	20,386	37,253	65,941
Ramallah	113	513	2,392	84	2,706	29	4,533	16,805	27,175	57,108
Hebron	250	217	5,596	3,107	9,590	62	22,334	57,072	98,228	74,281
Haifa	1,981	504	4,513	1,448	12,665	106	5,830	36,028	63,075	111,564
Acre	1,103	147	5,146	1,180	10,107	—	3,086	52,028	72,797	78,235
Nazareth	871	333	2,494	217	6,527	1	6,304	12,953	29,700	77,178
Safad	1,838	390	3,939	642	14,715	3,542	15,711	26,789	67,566	66,801
Tiberias	853	395	2,334	326	6,739	80	7,336	11,860	29,923	46,824
Beisan	1,033	197	1,257	112	6,127	—	7,677	8,121	24,524	51,212
Jenin	886	111	3,939	657	9,091	40	9,037	27,459	51,220	81,019
Nablus	661	181	5,545	549	10,664	109	17,507	43,152	78,368	94,576
Tulkarm	1,452	248	4,341	1,024	7,325	98	7,033	9,696	31,217	119,121
Jaffa	1,260	565	1,372	521	3,469	91	250	672	8,200	69,606
Ramle	1,184	2,206	5,810	3,294	13,179	312	8,721	15,255	49,961	218,202
Gaza	505	394	8,492	4,943	8,506	41	11,531	3,999	38,411	192,350
Beersheba	2,020	6	14,988	13,426	3,989	—	55,492	38,236	128,157	106,500
Palestine 1930	13,825	5,304	76,858	25,341	146,397	5,247	252,773	440,132	965,877	1,161,576
Palestine 1932	14,100	5,599	74,177	32,317	159,599	7,402	247,669	380,608	921,471	1,172,047
Palestine 1934	16,355	7,481	75,784	32,033	130,804	4,540	188,267	380,511	835,775	1,510,518

ENUMERATION OF LIVESTOCK, 1934.

(Based on Returns rendered by Mukhtars in July, 1934).

A. HORSES, MULES, DONKEYS AND CAMELS.

APPENDIX No. 16
TABLE II.

SUB-DISTRICT	HORSES						MULES			DONKEYS						CAMELS				GRAND TOTAL
	Under 1 year		Stallions	Mares	Geldings	Total	Under 1 year	Mules	Total	Foals under 1 year		Stallions	Mares	Geldings	Total	Foals	Male	Female	Total	
	Colts	Fillies					Foals			Male	Female									
PALESTINE:	**756**	**1,050**	**5,185**	**8,486**	**878**	**16,355**	**286**	**7,195**	**7,481**	**4,721**	**8,000**	**25,078**	**36,946**	**1,039**	**75,784**	**1,895**	**24,998**	**5,140**	**32,033**	**131,653**
Jerusalem District:	30	40	154	437	47	708	41	1,763	1,804	760	898	4,340	5,421	195	11,614	53	3,548	93	3,694	17,820
Jerusalem-Bethlehem-Jericho	19	22	96	175	33	345	34	1,040	1,074	245	294	1,413	1,634	40	3,926	15	434	54	503	5,548
Ramallah	4	3	18	82	6	113	—	513	513	181	208	1,036	864	103	2,392	3	81	—	84	3,102
Hebron	7	15	40	180	8	250	7	210	217	334	396	1,891	2,923	52	5,596	35	3,033	39	3,107	9,170
Northern District:	422	564	2,918	6,007	767	10,678	180	2,326	2,506	2,092	3,323	11,764	15,599	730	33,508	412	5,155	588	6,155	52,847
Haifa	74	99	739	975	94	1,981	40	464	504	343	596	1,547	1,909	118	4,513	37	1,300	111	1,448	8,446
Acre	37	44	198	775	49	1,103	13	134	147	308	401	2,134	2,214	89	5,146	17	1,010	153	1,180	7,576
Nazareth	32	30	220	512	77	871	13	320	333	129	185	1,005	1,141	34	2,494	—	188	29	217	3,915
Safad	94	135	236	1,202	171	1,838	32	358	390	207	292	1,159	2,137	144	3,929	75	439	128	642	6,809
Tiberias	39	45	127	554	88	853	36	359	395	138	156	872	1,082	86	2,334	150	117	59	326	3,908
Beisan	50	72	208	569	134	1,033	12	185	197	77	73	415	653	39	1,257	12	52	48	112	2,599
Jenin	43	57	184	528	74	886	13	98	111	250	550	1,062	1,965	112	3,929	112	498	47	657	5,593
Nablus	25	32	200	385	19	661	10	171	181	368	623	1,943	2,541	70	5,545	7	534	8	549	6,936
Tulkarm	28	50	806	507	61	1,452	11	237	248	272	447	1,627	1,957	38	4,341	2	1,017	5	1,024	7,065
Southern District:	304	443	2,113	2,045	64	4,969	65	3,106	3,171	1,869	3,779	8,974	15,926	114	30,662	1,430	16,295	4,459	22,184	60,986
Jaffa	4	8	1,132	105	11	1,260	11	554	565	44	19	1,095	211	3	1,372	218	303	—	521	3,718
Ramle	66	51	685	329	53	1,184	43	2,163	2,206	398	678	1,726	2,919	89	5,810	312	2,794	188	3,294	12,494
Gaza	42	45	81	337	—	505	11	383	394	253	473	4,151	3,593	22	8,492	61	4,784	98	4,943	14,334
Beersheba	192	339	215	1,274	—	2,020	—	6	6	1,174	2,609	2,002	9,203	—	14,988	839	8,414	4,173	13,426	30,440

(Based on Returns rendered by Mukhtars in July, 1934).

B. CATTLE, SHEEP AND GOATS.

SUB-DISTRICT	CATTLE						BUFFALOES					SHEEP					GOATS					GRAND TOTAL
	Calves under 1 year		Cows and Heifers	Bulls		Total	Calves under 1 year				Total	Male				Total	Male				Total	
	Male	Female		Castrated	Uncastrated		Male	Female	Male	Female		Castrated	Uncastrated	Female	Lambs		Castrated	Uncastrated	Female	Kids		
PALESTINE:	**12,948**	**17,382**	**63,886**	**29,460**	**7,172**	**130,804**	**396**	**547**	**1,175**	**2,422**	**4,540**	**561**	**9,022**	**147,652**	**31,032**	**188,267**	**3,760**	**13,710**	**304,513**	**58,528**	**380,511**	**704,122**
Jerusalem District:	1,680	2,332	8,621	3,681	1,387	17,701	10	34	44	32	120	49	1,120	27,056	4,527	32,752	184	2,888	78,346	12,845	94,263	144,836
Jerusalem-Bethlehem-Jericho	639	1,049	2,932	635	150	5,405	2	1	8	18	29	23	287	4,866	709	5,885	134	1,001	16,971	2,280	20,386	31,705
Ramallah	176	222	1,189	1,033	86	2,706	4	24	—	1	29	10	258	3,609	656	4,533	15	419	14,355	2,016	16,805	24,073
Hebron	865	1,061	4,500	2,013	1,151	9,590	4	9	36	13	62	16	575	18,581	3,162	22,334	35	1,468	47,020	8,549	57,072	89,058
Northern District:	8,379	10,646	37,460	23,094	4,381	83,960	352	451	1,042	2,131	3,976	449	3,486	63,488	12,098	79,521	3,418	8,893	181,110	34,665	228,086	395,543
Haifa	1,310	1,766	6,598	2,450	541	12,665	14	49	16	27	106	66	312	4,636	816	5,830	541	1,559	30,212	3,716	36,028	54,629
Acre	578	701	2,856	5,390	582	10,107	—	—	—	—	—	20	174	2,553	339	3,086	2,057	2,854	38,965	8,152	52,028	65,221
Nazareth	425	1,011	2,902	1,812	377	6,527	—	—	1	—	1	19	189	5,253	843	6,304	20	359	11,011	1,563	12,953	25,785
Safad	1,482	1,847	6,934	3,660	792	14,715	322	314	974	1,932	3,542	38	632	11,371	3,670	15,711	545	927	20,595	4,722	26,789	60,757
Tiberias	679	1,010	3,071	1,581	398	6,739	—	51	8	21	80	44	322	6,011	959	7,336	11	431	9,557	1,861	11,860	26,015
Beisan	584	792	3,521	949	281	6,127	—	—	—	—	—	21	264	6,319	1,073	7,677	2	120	6,686	1,313	8,121	21,925
Jenin	1,043	1,048	3,637	2,992	371	9,091	6	5	4	25	40	28	440	7,247	1,322	9,037	111	895	21,283	5,170	27,459	45,627
Nablus	1,384	1,535	4,637	2,592	516	10,664	—	3	32	74	109	156	803	14,321	2,227	17,507	39	1,368	34,773	6,972	43,152	71,432
Tulkarm	894	936	3,304	1,668	523	7,325	10	29	7	52	98	57	350	5,777	849	7,033	92	380	8,028	1,196	9,696	24,152
Southern District:	2,889	4,404	17,805	2,641	1,404	29,143	34	62	89	259	444	63	4,416	57,108	14,407	75,994	158	1,929	45,057	11,018	58,162	163,743
Jaffa	92	641	2,660	42	34	3,469	20	1	18	52	91	5	178	57	10	250	—	25	536	111	672	4,482
Ramle	1,205	1,585	7,960	2,002	427	13,179	13	52	50	197	312	24	544	7,024	1,129	8,721	127	382	13,064	1,682	15,255	37,467
Gaza	1,094	1,389	4,942	595	486	8,506	1	9	21	10	41	34	1,459	8,535	1,503	11,531	31	43	2,618	1,307	3,999	24,077
Beersheba	498	789	2,243	2	457	3,989	—	—	—	—	—	—	2,235	41,492	11,765	55,492	—	1,479	28,839	7,918	38,236	97,717

SUMMARY

Table II

Horses	16,355
Mules	7,481
Donkeys	75,784
Camels	32,033
Total	131,653

Table III

Cattle	130,804
Buffaloes	4,540
Sheep	188,267
Goats	380,511
Total	704,122

	Total
Table II	131,653
Table III	704,122
GRAND TOTAL	535,775

(Based on Returns rendered by Mukhtars in July, 1934).

APPENDIX 16
TABLE IV

C. POULTRY.

DISTRICT	Fowls (cocks, hens and chickens)	Ducks	Geese	Turkeys	Pigeons	Total
PALESTINE:	1,372,718	6,240	3,377	4,928	123,255	1,510,518
JERUSALEM DISTRICT:	185,240	243	98	1,321	10,428	197,330
Jerusalem-Bethlehem-Jericho	60,365	164	83	492	4,837	65,941
Ramallah	55,113	2	15	373	1,605	57,108
Hebron	69,762	77	—	456	3,986	74,281
NORTHERN DISTRICT:	665,970	1,531	1,365	1,439	56,225	726,530
Haifa	99,569	561	95	334	11,005	111,564
Acre	75,157	8	93	208	2,769	78,235
Nazareth	73,195	—	18	89	3,876	77,178
Safad	61,265	259	694	176	4,407	66,801
Tiberias	39,965	96	310	126	6,327	46,824
Beisan	49,188	248	20	138	1,618	51,212
Jenin	71,718	12	36	62	9,191	81,019
Nablus	89,467	284	30	142	4,653	94,576
Tulkarm	106,446	63	69	164	12,379	119,121
SOUTHERN DISTRICT:	521,508	4,466	1,914	2,168	56,602	586,658
Jaffa	59,882	1,353	676	565	7,130	69,606
Ramle	191,548	2,793	536	1,246	22,079	218,202
Gaza	165,633	120	599	257	25,741	192,350
Beersheba	104,445	200	103	100	1,652	106,500

SUMMARY:

Fowls	1,372,718
Ducks	6,240
Geese	3,377
Turkeys	4,928
Pigeon	132,255
Total	1,510,518

APPENDIX No. 16
TABLE V

ENUMERATION OF LIVESTOCK, 1934.

SUMMARY BY KIND OF ANIMALS.

Kind of Animals	No.	Total	GRAND TOTAL
rses, Mules, Donkeys and Camels:			**131,653**
Horses:		16,355	
Colts	756		
Fillies	1,050		
Stallions	5,185		
Mares	8,486		
Geldings	878		
Mules:		7,481	
Foals under 1 year	286		
Mules	7,195		
Donkeys:		75,784	
Foals under 1 year: male	4,721		
Foals under 1 year: female	8,000		
Stallions	25,078		
Mares	36,946		
Geldings	1,039		
Camels:		32,033	
Foals	1,895		
Male	24,998		
Female	5,140		
ttle and Buffaloes:			**135,344**
Cattle:		130,804	
Bulls castrated	29,416		
Bulls uncastrated	7,172		
Cows and heifers	63,886		
Calves, under 1 year: male	12,948		
Calves, under 1 year: female	17,382		
Buffaloes:		4,540	
Male	1,175		
Female	2,422		
Calves under 1 year: male	396		
Calves under 1 year: females	547		
eep and Goats:			**568,778**
Sheep:		188,267	
Male castrated	561		
Male uncastrated	9,022		
Female	147,652		
Lambs under 1 year	31,032		
Goats:		380,511	
Male castrated	3,760		
Male uncastrated	13,710		
Female	304,513		
Kids under 1 year	58,528		
ultry:			**1,510,518**
Fowls (Cocks, Hens and Chickens)		1,372,718	
Ducks	6,240		
Greese	3,377		
Turkeys	4,928		
Pigeons	123,255		

APPENDIX No. 17

RULES MADE UNDER THE DISEASES OF ANIMALS ORDINANCE, 1926 HERE IF POSSIBLE 1926, AND PROMULGATED DURING THE YEAR 1934—35.

Description of Rules	Palestine Gazette	
	Number	Date
1. Regarding the removal of imported stock from Haifa to Hadera	433	12.4.34
2. Regarding the importation of cattle for breeding, and cattle, sheep and goats for slaughter, from Hungary.	435	19.4.34
3. Regarding the importation of cattle for slaughter from Turkey.	449	28.6.34
4. Regarding the removal of imported slaughter stock from Haifa to Affula.	455	26.7.34
5. Haifa Animal Quarantine Station, Overtime Fees.	456	2.8.34
6. Regarding the removal of imported slaughter stock from Haifa to Hertsliya.	465	6.9.34
7. Hadera — Slaughter House Rules.	465	6.9.34
8. Amending Animal Quarantine Rules, 1931.	467	20.9.34
9. Regarding the importation of cattle for slaughter and sheep and goats for any purpose from Roumania.	471	11.10.34
10. Regarding the importation of cattle for breeding and cattle sheep and goats for slaughter from Lithuania.	473	25.10.34
11. Regarding the importation of cattle for slaughter, and sheep and goats for any purpose from Bulgaria.	479	6.12.34
12. Regarding the importation of cattle, sheep and goats for slaughter from Iraq.	481	20.12.34
13. Regarding the removal of imported slaughter stock from Haifa to Ramat Gan.	481	20.12.34
14. Regarding the introduction of foreign Hay and Straw.	481	20.12.34
15. Hertsliya—Slaughter House Rules.	484	3.1.35
16. Regarding revokation of Rabies Rules, 1928.	494	14.2.35
17. Regarding the importation of cattle for breeding, sheep and goats for any purpose, and cattle for slaughter, from Greece.	496	28.2.35
18. Regarding the importation of Horses, Mules and Donkeys from European Countries.	500	28.3.35

APPENDIX No. 18.

ACRE STOCK FARM

ESTABLISHMENT OF ANIMALS ON THE 31ST MARCH, 1935.

Kind	Breed	No.	Total
CATTLE:—			99
Bulls	Lebanese	43	
	Boaz	6	
	Kerry	2	51
Cows	Lebanese	19	
	Boaz	3	
	Kerry	8	30
Heifer calves	Lebanese	5	
	Boaz	3	8
Bull calves	Lebanese	7	
	Kerry	3	10
HORSES:—			10
Stallions	Arab	3	
	Highland	2	5
Mares	Arab	3	3
Foals	Arab	2	2
DONKEYS:—			19
Jackasses	Damascus	5	
	Cyprian	4	9
Mares	Damascus	3	
	Cyprian	3	6
Jackfoals	Damascus	3	
	Cyprian	1	4
SHEEP:—			413
Ewes	Awasi	209	
	Black face	5	
	Karakul	1	
	Blackface cross	3	218
Ewe lambs	Awasi	53	
	Awasi x Karakul	14	
	S.B.F x Awasi	5	72
Rams	Awasi	49	
	Black face	1	
	Karakul	4	
	Dorset Horn	4	
	S.B.F. x Awasi	2	60
Ram lambs	Awasi	59	
	S.B.F. x Awasi	3	
	Karakul	1	63

Continued

Kind	Breed	No.	Total
GOATS:—			392
She goats	Damascus	52	
	Mamber	116	168
Male goats	Damascus	35	
	Mamber	44	79
Female kids	Damascus	22	
	Mamber	46	68
Male kids	Damascus	21	
	Mamber	56	77
SWINE:—			11
Sows	Middle White	4	4
Boars	Middle White	1	
"	Large White	1	2
Piglets Female	Middle White	2	2
" Male	Middle White	3	3
WORKING ANIMALS:—			7
Mules		3	3
Horses		4	4
	TOTAL ANIMALS		951

APPENDIX No. 19.

ACRE STOCK FARM.

ANIMALS BORN ON THE FARM DURING 1934/35.

Kind	Breed	No.	Total
CATTLE:—			20
Heifer Calves	Lebanese	6	
	Boaz	3	
Bull calves	Kerry	3	
	Lebanese	8	
HORSES:—			
Filly Foals	Arab	2	2
DONKEYS:—			
Jack foals	Damascus	5	5
SHEEP:—			165
Ewe lambs	Scotch Black Face	3	
Ram lambs	Scotch Black Face	5	
Ewe lambs	Awasi	56	
Ram lambs	Awasi	61	
Ewe lambs	Karakul x Awasi	14	
Ram lambs	Karakul x Awasi	12	
Ewe lambs	S.B.F. x Awasi	10	
Ram lambs	S.B.F. x Awasi	3	
Ram lambs	Karakul	1	
GOATS:—			213
Male kids	Damascus	61	
	Mamber	77	
Female kids	Damascus	29	
	Mamber	46	
SWINE:—			77
Female Piglets	Middle White	31	
Male "	Middle White	46	

APPENDIX No. 20.

ACRE STOCK FARM.

ANIMALS ACQUIRED DURING 1934/35.

Kind	Breed	No.	Total	Contry of origin.
CATTLE:—			25	
Bulls	Lebanese	14		Syria
	Kerry	3		England
Cows	Kerry	8		England
HORSES:—			2	
Ponies	West Highland	2		Scotland
SHEEP:—			10	
Rams	Karakul	3		Germany
	Karakul	1		Roumania
	Dorset Horn	4		England
Ewe	Karakul	1		Roumania
Ewe lamb	Karakul	1		Roumania
GOATS:—			15	
Male goats	Damascus	11		Syria
	Mamber	4		"

APPENDIX No. 21.

GOVERNMENT VETERINARY LABORATORY.

RESULTS OF EXAMINATION OF SPECIMENS SUBMITTED FOR DIAGNOSIS.

Disease	Cattle	Horses	Sheep	Goats	Pigs	Dogs	Bees	Poultry	Total
Piroplasmoses :									
Acute Theileria Annulata	35	—	—	—	—	—	—	—	35
Theileria Annulata	160	—	—	—	—	—	—	—	160
Anaplasmosis	23	—	5	31	—	—	—	—	59
Piroplasma Bigeminum	15	—	—	—	—	—	—	—	15
Babesia Bovis	38	—	—	—	—	—	—	—	38
Babesia Ovis	—	—	1	—	—	—	—	—	1
Piroplasma caballi	—	2	—	—	—	—	—	—	2
Nuttalia Equi	—	1	—	—	—	—	—	—	1
Anthrax	31	3	121	38	1	—	—	—	194
Blackquarter	1	—	—	—	—	—	—	—	1
Epizootic Lymphangitis	—	2	—	—	—	—	—	—	2
Tuberculosis	3	—	—	—	—	—	—	1	4
Pulpy Kidney Disease	—	—	6	—	—	—	—	—	6
Calf Diphteria	2	—	—	—	—	—	—	—	2
White Scour	2	—	—	—	—	—	—	—	2
Sarcoptic Mange	—	—	1	11	—	—	—	—	12
Coccidiosis	1	—	—	2	—	—	—	—	3
Strongylosis	—	2	1	—	—	—	—	—	3
Ascariasis	—	2	—	—	—	—	—	—	2
Oxyuriasis	—	2	—	—	—	—	—	—	2
Gastritis	—	—	—	—	1	—	—	—	1
Gastritis & Metritis	—	—	1	—	—	—	—	—	1
Teratoma	—	1	—	—	—	—	—	—	1
Mastitis									
Streptococcus	6	—	—	—	—	—	—	—	6
B. Coli	1	—	—	—	—	—	—	—	1
Gram + ovoid bacteria	1	—	—	—	—	—	—	—	1
B. Pyogenes	1	—	—	—	—	—	—	—	1
Poultry Diseases :									
Fowl Typhoid	—	—	—	—	—	—	—	35	35
Fowl Cholera	—	—	—	—	—	—	—	16	16
Spirochaetosis	—	—	—	—	—	—	—	56	56
Cell Inclusion Disease	—	—	—	—	—	—	—	25	25
Coccidiosis	—	—	—	—	—	—	—	2	2
Fowl Pox & Diphtheria	—	—	—	—	—	—	—	1	1
Wattle disease	—	—	—	—	—	—	—	1	1
Avitaminosis	—	—	—	—	—	—	—	4	4
Visceral Gout	—	—	—	—	—	—	—	3	3
Egyptionella Pullorum	—	—	—	—	—	—	—	3	3
Lymphocytoma	—	—	—	—	—	—	—	5	5
Peritonitis	—	—	—	—	—	—	—	5	5
Lung Abcess	—	—	—	—	—	—	—	1	1
Ascitis Cirrhosis of Liver	—	—	—	—	—	—	—	6	6
Diseases of Oviduct	—	—	—	—	—	—	—	2	2
Tumours	—	—	—	—	—	—	—	1	1
Leukaemia	—	—	—	—	—	—	—	1	1
Bee Diseases :									
European Foul Brood	—	—	—	—	—	—	7	—	7
American Foul Brood	—	—	—	—	—	—	2	—	2
Sac Brood	—	—	—	—	—	—	1	—	1
Negative	272	45	55	29	1	1	3	278	684
TOTAL	592	60	191	111	3	1	13	446	1417

Appendix No. 22.

IMPORT OF POULTRY BY MONTHS.

Month	1931	1932	1933	1934
January	3,259	12,486	17,593	53,237
February	13,729	9,345	15,891	33,957
March	16,249	14,485	29,720	36,035
April	8,901	15,486	33,653	52,538
May	3,577	18,411	31,818	54,170
June	3,766	27,653	22,298	50,791
July	4,992	27,135	25,816	55,705
August	11,408	29,806	30,684	91,724
September	24,020	32,002	51,039	143,086
October	18,170	42,062	40,440	75,826
November	18,463	25,902	31,039	83,775
December	13,882	25,198	33,042	71,488
TOTAL	140,416	279,971	363,033	802,332
MONTHLY AVERAGE	11,701	23,331	30,253	66,861

Appendix No. 23.

IMPORT OF POULTRY BY COUNTRIES OF ORIGIN.

Imported from	1931	1932	1933	1934
Bulgaria	5	47	660	96
Cyprus	509	154	199	762
Egypt	6	339	89	—
Iraq	74,698	55,176	42,115	315,195
Poland	—	—	—	56
Roumania	15	214	30	720
Syria	60,396	218,337	319,598	479,148
Trans-Jordan	4,787	4,080	176	5,671
Turkey	—	1,607	59	665
United Kingdom	—	17	64	19
Other Countries	—	—	43	—
TOTAL	140,416	279,971	363,033	802,332

Appendix No. 24.

IMPORT OF EGGS BY COUNTRIES OF ORIGIN

Imported from	1931	1932	1933	1934
Egypt	2,857,886	9,595,800	21,041,090	21,424,620
Syria	4,214,990	7,151,765	9,749,628	7,049,398
Iraq	481,610	1,351,810	2,705,011	6,440,401
Turkey	6,512	1,600	659,100	21,129,380
Other Countries	—	2,000	160,650	1,938,100
TOTAL	7,566,998	18,102,975	34,315,479	56,981,879

APPENDIX No. 25.

NUMBER OF MODERN BEEKEEPERS AND BEEHIVES IN PALESTINE.

Sub-District	No. of Villages			No. of Beekeepers			No. of Hives Full + Empty		
	1932	1933	1934	1932	1933	1934	1932	1933	1934
Jerusalem	1	8	14	1	11	23	98+10	193+40	232+12
Ramallah	—	5	7	—	6	8	—	38+2	51+2
Bethlehem	—	2	1	—	2	1	—	3+12	3+2
Hebron	—	2	2	—	6	9	—	36+19	59+34
Jaffa	15	15	23	66	68	111	2281+1274	3298+1222	5887+98
Ramle	10	9	13	47	44	49	1375+1484	1360+1429	2778
Gaza	1	2	4	1	2	7	68+20	76+22	29
Haifa	7	9	12	44	55	72	1444+698	2006+427	3383
Acre	1	1	1	1	1	2	160	160	140
Nazareth	9	8	11	12	12	14	441+277	276+273	315
Beisan	3	3	3	5	5	5	131+206	190+207	202
Tiberias	2	2	2	7	2	2	113+103	103+83	250
Safad	6	5	9	7	6	10	294+170	297+185	315
Tulkarm	1	1	13	1	1	27	39+11	39+11	302
Nablus	—	—	2	—	—	3	—	—	19
Jenin	—	—	4	—	—	4	—	—	20
TOTAL	56	72	121	192	221	347	6444+4253 =10697	8075+3932 =12007	13985+148 =14133

APENDIX No. 26.

DISTRIBUTION OF PRODUCE FROM ACRE AND DISTRICT POULTRY STATIONS AND APIARIES.

Item	Free Issues		Sales		Total	
	No.	Value LP. Mils	No.	Value LP. Mils	No.	Value LP. Mils
Breeding Fowls	397	99.250	1,561	175.912	1,958	275.162
Day-Old Chicks	—	—	5,583	105.606	5,583	105.606
Hatching Eggs	—	—	39,075	263.906	39,075	263.906
Ducks	—	—	5	1.050	5	1.050
Turkeys	—	—	10	5.750	10	5.750
Bee-swarms	56	28.000	253	105.300	309	133.300
Rabbits	22	5.500	55	13.375	77	18.875
Table Eggs	126	0.378	179,851	547.118	179,977	547.496
Table Poultry	—	—	4,324	204.756	4,324	204.756
Honey	—	—	711kgs.	57.082	711kgs.	57.082
TOTAL		133.128		1,479.855		1,612.983

REPORT ON THE FOREST SERVICE FOR THE YEAR ENDING MARCH, 1935.

CONTENTS:

I. Introduction.

II. Forest Reservation.

III. Demarcation and Survey.

IV. Natural Regeneration.

V. Protection.

VI. Seeds and Plants.

VII. Afforestation.

VIII. Amenity Planting.

IX. Working Plants.

X. Exploitation.

XI. Research.

XII. Carobs.

XIII. Olive Planting.

XIV. Education.

XV. Financial Statement.

XVI. Statistical Appendices.

ANNUAL REPORT OF THE FOREST SERVICE FOR THE YEAR ENDING MARCH 31st, 1935.

I. Introduction.

1. This report covers the financial year from the 1st of April, 1934, to the 31st March, 1935. Statistics and other data are shown in the appendices at the end of the report. For the sake of brevity much of the information on Government afforestation has been compressed in the form of an appendix on that subject.

2. Despite a general failure of the latter rains weather conditions were on the whole favourable to afforestation. The amount of rainfall exceeded that of recent years so that transplants made a good start and seed sown directly in plantations showed a good germination. Weed growth was favoured by the weather conditions and involved more intensive cleaning than usual.

3. Proposals for further expansion of the Forest Service have resulted in provision for additional personnel in the 1935/36 estimates, as well as for increases in the votes for forest nurseries and for the grafting of wild carobs in forest reserves. During the summer a provisional budget for five years was drafted in connection with proposals for an expanded programme of afforestation.

4. The need for extension of forest planting has been strikingly illustrated by climatic phenomena experienced during the year. Extensive damage and losses were incurred through floods originating in the unforested hill areas and through sand drift and adverse winds in the plains. The case for increased forest production has been emphasized by the remarkable rise in imports of timber and forest products which exceeded a million pounds. Even charcoal, plough timber, tool handles, and fruit tree supports are now being imported.

5. The forest branch has continued to function as a more or less semi-independent unit in the Department with its multifarious services. The Deputy Director, who is engaged in rendering vicarious assistance in the affairs of the Department, has continued to exercise control of forest activities and personnel, assited by a single professionally trained officer in the person of the Senior Forest Officer. Certain changes of nomenclature have been introduced in consequence of the formation of the Colonial Forest Service. For the present the Deputy Director retains his present functions but is also shown as Conservator of Forests in the forest section of the estimates, while the title of the Senior Forest Officer has been changed to Assistant Conservator of Forests.

Two Palestinians continue their training in forestry at Oxford. One, who is undergoing a post graduate course, is expected to return for appointment as Assistant Conservator in October next.

6. The control of the Sericultural Service, which was attached for some years to the Forest Service, has now been withdrawn.

7. Activities in connection with the propagation of carobs at nurseries and the grafting of wild carobs in forest reserves have been intensified. A new branch of work undertaken, at present on experimental lines, is that of road-side planting.

8. Various factors connected with forest policy have been discussed with District Commissioners and the Commissioner of Lands, notably regarding forest reservation and settlements, grazing, revenue collection, and the planting of fruit trees in forest reserves.

9. The excellent rains stimulated the demands for trees by the public and there is no doubt that the interest in tree planting and the growth of a forest consciousness are steadily gaining ground among all sections of the community.

The Village Tree Planting Committee made a number of tours through the country and has done good work in connection with propaganda, while the "Men of the Trees in Palestine" has been able, with limited resources, to continue some small but valuable planting schemes.

A number of memorial planting schemes have been inaugurated by the Jewish community during the year, the latest being that of the King George's Jubilee Forest to be planted on the hills near Nazareth.

Afforestation by private agency should be stimulated by the recently enacted Rural Property Tax Ordinance under which "Forests, planted and indigenous, and uncultivated land" are free of land taxation.

II. Forest Reservation.

10. Six new reserves have been proclaimed. The Bassat Sheikh Mohammad reserve serial No. 191 has been revoked for the settlement of landless Arabs, while the Zeiback reserve, formerly serial No. 10, has been redeclared under serial No. 193. Parts of the Arab Subeih reserve serial No. 90 have been leased to the Arab Subeih tribe for cultivation. The present actual number of reserves is 238 covering approximately 699,708 dunams or 270 square miles.

11. The six reserves gazetted during the year, covering 6,387 dunams, are briefly described as follows :—

Dahr Saqab.

Serial No. 240, area 81 dunams, situated on the Carmel hills in Haifa subdistrict. This is one of the very few areas carrying a natural forest of Pinus halepensis; it has been reserved with a view to improvement by protection and silvicultural treatment for the production of timber. The land is registered state domain.

Jabal Sasha.

Serial No. 237, area 1,907 dunams, situated on the Nazareth hills on steep rocky land with scant natural vegetation. This has been taken up for reafforestation for the production of timber, firewood, charcoal, and other produce, and also to arrest soil erosion and to conserve rainfall.

Jabal El-Mathuma.

Serial No. 238, area 609 dunams, adjoining No. 237 on the Nazareth hills. This reserve has similar conditions of locality and has been constituted for the same purposes.

Mt. Tabor West.

Serial No. 239, area 920 dunams, situated on the western slopes of Mt. Tabor, adjoining the Arab Subeih reserve No. 90. The conditions and objectives are the same as those for the preceding reserves.

Meiroun.

Serial No. 235, area 1,964 dunams, situated in the Safad sub-district, east of Megido village. Although not precipitous, much of the soil has been denuded leaving perhaps fifty per cent. or more of rock outcrop. The land has been continuously overgrazed and very little woody vegetation remains. The intention is to plant soil patches and pockets and to restore natural vegetation by protection. The high rainfall in this locality should render possible the growing of timber.

Esh-Shuaf.

Serial No. 236, area 906½ dunams, situated in the Ramleh sub-district near El-Mughar village. It consists of barren low sand-stone hills probably only suitable for afforestation for the production of fuel, small timber, and forest pasturage.

12. Forest reservation continues to be based on the policy formulated in 1926, viz: "the State protection of woodland growth in areas of potential national forests rather than one of immediate determination of the limits of national ownership provided that the claims to such ownership could be reasonably safeguarded against encroachment and the recognition of dubious claims pending survey and settlement".

For a number of years it was possible to implement this policy, admittedly provisional, without serious difficulty and in fact the procedure was improved by the provision of machinery for demarcation and survey enabling reserves to be scheduled with map references, accurately defined boundaries and precisely determined areas.

13. It was however intended that the procedure should be replaced within a reasonable time by reservation based on land settlement. In one instance land settlement has commenced in the village of Shefa Amr where there are forest areas awaiting reservation. In a second case, that of the newly proclaimed reserve of Esh-Shuaf, the land was determined by process of land settlement to be in definite state ownership. In 27 other instances gazetted reserves have been registered as state domains. Most of these, however, are still subject to boundary disputes and land claims and the majority of the 238 reserves to this day only have the vague status of "potential national ownership" and in many of them a variety of claims have arisen the settlement of which is not within the jurisdiction of the Forest Service. Moreover their existence not only involves considerable friction with the people but also creates constant embarrassment in the protection of the reserves from encroachment. The advancement of claims, in many instances years after formal reservation, is due mainly to the enormous rise in land values which has now affected even more or less barren hill-lands possessing no other permanent use except as potential forest or rough pasturage. Many claimants have no other object in view than the sale of the lands. Similar difficulties apply to the constitution of proposed reserves. Eighty seven areas covering 109,421 dunams have been demarcated and surveyed with a view to reservation but have not been gazetted on account of numerous and complicated disputes and claims of doubtfull validity. In addition there are extensive forest areas in the Acre and Safad sub-districts covering approximately 150,000 dunams, reservation of which has been postponed though in all probability they ought to be made reserves in the interest of water and soil conservation if for no other reasons. A further disadvantage of the delay in applying land settlement is the fact that Government is spending money on afforesting lands in uncertain title and is

contemplating substantial increases of expenditure. It is thus becoming increasingly evident that the formula adopted in 1926 is no longer adequate to present day requirements and that either land settlement must be accelerated in the near future or special machinery must be introduced for forest settlement.

III. Demarcation and Survey.

14. Appendix 3 reflects the progress in forest survey and demarcation carried out by the two Forest Surveyors during the year. Twenty two reserves, earlier scheduled with rough descriptions and boundaries, have been accurately demarcated and mapped. The intention is ultimately to revise gazette proclamations after land settlement and in the meantime to provide the forest wardens, as far as possible in the existing state of uncertainty as to title, with tangible areas which they are expected to protect. In addition to the fixation of 818 Rock Marks (iron bolts concreted into rocks) and Land Marks (angle irons fixed in the ground), 16 masonry cairns have been constructed at prominent corners in 7 forest reserves.

15. Appendix 4 shows the extent to which all reserves proclaimed to the end of the year have been subjected to demarcation and survey. Of 239 reserves 124 have been surveyed subsequent to publication in the gazetttes, while 43 have been surveyed prior to gazetting. Survey of the 124 reserves after gazetting has revealed a discrepancy in total area of minus 29% which is ascribed partly to earlier inaccuracies of estimation, and partly to subsequent encroachments. The latter are believed to account for 10% of the reduction. In addition since 1925 eighty-seven areas, reservation of which has been postponed, have been demarcated and surveyed.

16. During the year the Forest Surveyors have brought up-to-date the survey of 26 plantation areas, including new areas taken up for planting during 1934. Details are shown in Appendix 5. They have also surveyed 7 road-side plots (Appendix 9) and have devoted 62 days' time to survey work for other services of the Department (Appendix 6).

17. Fencing at 16 forest plantations and road-side plots has been carried out under the supervision of the Forest Surveyors. Details are shown in Appendix 7.

18. New maps and copies, including sun prints and drawings have been made during the year to the number of 187 as shown in the following schedule. The majority of forest surveys have been made with plane table and telescopic alidade to a scale of 1:10.000. Survey work for other services has involved levelling and tacheometrical survey :—

(a)	*New Maps.*	
	Forest reserves and proposed reserves	17
	Government Forest plantations	15
	Road-side plots	8
	For other services	10
(b)	Copies of (a)	76
(c)	Copies of maps issued to Forest Rangers and Forest Guards, Departments of Surveys, Lands, Development, District Commissioners and others.	57
(d)	Wall maps for Headquarters showing distribution of reserves, plantations, carob areas, proposed reserves, sand dunes, nurseries, road-side plots and personnel.	4
		178

IV. Protection.

19. (a) *Changes in the Forest Law.*

Nil.

20. (b) *Forest Offences.*

Particulars of contraventions are shown in Appendix 21. There has been a large increase in the number of persons prosecuted which has risen from 1,832 last year to 2,203. Convictions were obtained against 1,953 persons and fines totalled £P.1,038. One case was compounded. In the analysis of cases 121 are recorded as "land encroachments" but it is probable that many of the offences classified as "unauthorised felling" were committed as much with the intention of establishing claims to land based on alleged cultivation as with the intention of obtaining produce. Representations were made to the Judiciary regarding the inadequacy of fines and consequent forest destruction, particularly noticeable in the Jenin-Tulkarm area, and a number of heavier fines were imposed. Cases reported by the Police numbered 115.

21. (c) *Fires.*

Two fires only occurred, as shown in Appendix 22, a satisfactory figure considering the drought of the spring and summer of 1934 and the extended use of coniferous species in plantation areas.

22. (d) *Grazing.*

No census of animals was made during the last year. Mortality of stock was great during the winter of 1933/34 and the incidence of grazing in forest reserves during 1934 and the spring of 1935 was thereby considerably reduced. Cases of illicit grazing numbered 110. In several instances right-holders were permitted to cut and collect grass by hand in "closed forest areas". Owing to good rains during the 1934/35 rainy season grazing this year is abundant and is regarded as being more luxuriant than for many years.

23. Grazing of right-holders animals has been restricted only in areas which require protection for a period of years during planting operations and until the trees attain a height beyond possibility of damage and in areas in which wild carob trees are being budded. Ten additional "closed forest areas" covering 4,719 dunams were notified, in all cases in connection with carob budding. The total number of areas closed at the 31st March, 1935, was 30 with a total area of 23,039 dunams or 3% of the total area of all reserves.

24. In all these cases the villages concerned have alternative grazing areas within their village boundaries. The following figures show in summary form the extent to which grazing of "rightholders" and "strangers" cattle has been licensed in forest reserves :—

Number of Rightholders' cattle licenced to graze in Forest Reserves.	62,972
Number of Strangers' cattle licensed to graze in Forest Reserves.	5,386
Total :	68,358

Grazing licences issued to Rightholders numbered 840 and to Strangers 23. Further details of grazing are shown in Appendices 16 and 17.

25. There is no doubt that as land is broken up for intensive cultivation — a process which is accelerated by land settlement and the change from common to individual ownership — ultimately the total area of rough pasturage will be considerably reduced. Grazing facilities, therefore, in forest reserves will come

to have a higher value in the villages which are fortunate enough to have had reserves constituted within the village boundaries. A number of small plots in reserves have been made available to the Agricultural Service for the purpose of experimental pasturage research and in course of time artificial improvement of natural forest pasturage and the introduction of rotational grazing should have a beneficial effect on the grazing of village cattle in the reserves.

26. (e) *Fencing.*

Appendix 7 shows particulars of fencing carried out during the year. The type of fencing used for rocky, irregular ground in the hill areas consist of angle iron posts, 2 yards high x 5 cms. x 5 mms. concreted into the ground at a depth of 40 cms., 5 metres apart with supports at corners and every 50 metres, and 5 strands of galvanized barbed wire. These materials were obtained from the Crown Agents and the average cost of fencing of this type including cost of materials, transport, and labour has worked out this year at 58 mils per running metre erected.

In a few cases Eucalyptus fencing posts cut from Departmental plantations have been used. During 1934/35 fences were erected at 6 forest plantations and 10 road-side planting plots; the total area fenced was 894 dunams. The total number of areas fenced to the 31st March, 1935, is 32 and the total area approximately 5,628 dunams. Fencing is resorted to only where there is danger of cattle grazing and trespass where reserves adjoin roads and tracks and in some cases fences were erected only on the most dangerous sides. Elsewhere protection if afforded by local forest guards who reside on the spot.

27. (f) *Diseases and Insect Pests.*

There have been no sustained or systematic investigations of this aspect of the forest protection as regards the living tree, seeds, timber, and other products of the forest and there is no doubt that the subject will assume increased importance as natural woods and plantations develop to a productive stage. Such work as has been done has been confined to the investigation of damages to seedlings and transplants at nurseries. These are cited in paragraph 58.

28. (g) *Soil Erosion and Water Run-Off.*

The writer ventured to predict in the report for the year 1932 and 1933 that the advent of normal rainy seasons would inevitably be followed by a recrudescence of grave damage due to flooding and soil erosion, and this has unhappily proved to be the case during the last rainy season. Scientific assessment of losses from these factors has never been attempted in Palestine and in all probability much of the damage done is never reported in general or recorded in detail since the losses incurred are spread over wide areas and are more or less imperceptible to the individual cultivator. The losses of fertile top soil from the hills and the fields in many parts of the plains must be enormous, while the wastage of water which might be conserved by widespread afforestation in the hills is incalculable in a country whose gravest disadvantage is the paucity and uncertainty of the rainfall and the general shortage of water during a prolonged and entirely rainless summer. Specific cases of visible and tangible damages were reported in the Tiberias, Nablus, Jenin, Tulkarm, Acre, Bethlehem and Hebron areas. They comprised actual losses of human and animal life, dislocation of road and rail-traffic, the silting up of stretches of main roads, the erosion of road surfaces and foundations, the destruction of road culverts and bridges, wash-outs along the railway line, the destruction of crops and fruit trees and field and orchard terraces, prolonged flooding of fields and crops in the plains, and damage to houses and other buildings. The Departments of Public Works and Railways must have been involved in heavy expenditure on repairs, while Government was obliged to issue large sums to relieve cultivators who had suffered. Afforestation has not so far been sufficiently extended to have a material

effect on soil erosion and still less on water conservation, but in certain cases even small plantations have undoubtedly had a beneficial influence in retaining soil and in limiting damage from water run-off.

29. (h) *Sand-Drift.*

Sand-dune reclamation was continued by the Service at Gaza and at Jabalia. At Acre planting operations were suspended in view of the probable surrender of the land from Government ownership and attention was confined to a simple protection from grazing and trespass. In a paper written in 1925 it was suggested that under certain circumstances sand-dunes were capable of development in other ways and for other purposes than by or for afforestation. That suggestion is now being borne out in practice at a number of points along the coastal dunes. On the Haifa-Acre dunes, railway workshops, oil depots, factories and industrial establishments, residential buildings, and even small flower and fruit gardens, and an aerodrome, have either been completed or are in progress. Development of a similar character has taken place at Nathania (where however sand drift conditions are less severe); on the dunes south of Jaffa; and to some extent on sand areas at Gaza. Success in these cases appears to depend on large financial resources, a rainfall of 350 mms. or more, adequate water supplies, and the concentration of works and buildings to provide shelter from the sand and salt laden winds, but even where conditions are favourable to this type of development, technical measures of tree and grass planting have been necessary.

30. Further south with a lower rainfall, a desert climate, and much more extensive and higher sand dune areas, the possibilities of development on the lines described are probably much more remote, and are less likely to attract the large capital sums required particularly since the southern Gaza and Beersheba areas which they adjoin offer small prospects of development unless abundant water supplies are discovered. Considerable damage was caused by sand-drift to cereal cultivation in southern Gaza and in Beersheba, and it was reported that 3,000 dunams of water-melons were destroyed and had to be resown. Sand-drift in this area is also a frequent source of trouble to the Department of Railways through sand covering the permanent way. The Engineer in charge, copying methods earlier introduced by the Forest Service, has achieved important results in dealing with this problem, by planting sand grasses and shrubs in belts along the line. Towards the interior sand-drift tends to assume more menacing proportions owing to the uprooting of desert plants for fuel, the woody portion of these plants being mainly represented in the roots. During the year under report a small experimental scheme to deal with the dual problem of arresting sand-drift and of growing trees and shrubs for fuel was started at Kilo 107 on the Beersheba-Asluj road.

Agriculture in the south has to encounter not only sand-drift from the west and south-west but also more or less prolonged periods of exceptionally dry winds from the east indicating the need for shelter belts running from north to south as well as the reclothing of the sandy wastes with natural vegetation and any form of tree growth which can be successfully established under arid condition which prevail.

V. Natural Regeneration.

31. Owing to damage by grazing and the immature character of most reserves and plantations natural regeneration from seed has been of rare occurrence hitherto. With better protection and the increasing age of the trees reproduction from seed is becoming more noticeable. The following instances have been reported by Forest Rangers during the year :—

Forest Ranger.	Species.	Place.
Acre	*Pinus Halepensis*	Jabal Mushaqqa.
	Acacia cyanophylla	Acre Sand Dunes Plantation.
Tiberias	*Quercus aegylops*	Ras El-Mal Reserve.
Jerusalem	*Pinus Halepensis*	Um Safa Reserve.
	Pinus Halepensis	Khallet Taleb Reserve.
Zichron	*Pinus Halepensis*	Igzim Reserve.
	Quercus aegylops	Ain Ghazal.
	Pistacia lentiscus	" "
Haifa	*Pinus Halepensis*	In several reserves.
Nazareth	*Acacia cyanophylla*	Nazareth Plantation.
	Acacia lophantha	Nazareth Plantation.
	Ailanthus glandulosa	Private Plantations.

32. Coppice regrowth has been favoured by excellent rains during the past season and scrub growth in the majority of forest reserves is rapidly responding to protective measures and is beginning to assume quite a respectable size.

VI. Seeds and Plants.

(a) *Seeds.*

33. Seeds for nurseries and plantations have been obtained by local collection or purchase, by purchase abroad, and by exchange. Local collection has been developed considerably in comparison with previous years and amounted to 404 kilogrammes of some 39 species. *Pinus pinea* plantations have not yet reached the seed-bearing stage and 3,843 kilogrammes of this seed were purchased from Syria for direct sowing. Seed dealt with during the year was as follows :—

Collected locally	—	404 kgs.	— 39 species.
Purchased locally	—	47 "	— *Pinus halepensis.*
Purchased from Syria	—	3,843 "	— *Pinus pinea.*
Purchased abroad	—	9 "	— 18 species.
Obtained by exchange	—	206 Packets	— 96 species.

(b) *Plants.*

34. Fourteen nurseries were maintained; their distribution is shown in Appendix 13. The nurseries at Nablus and Maddad were used for growing mulberries for sericultural purposes under the charge of the Sericultural Adviser. The organisation of a new nursery at the Acre Stock Farm was started in 1934. The carry over of plants from the previous year was 114,806 and production during the year 1,406,190 being an increase of approximately 121,786 plants. Fifty thousand plants were destroyed by floods at the Tiberias nursery after a cloud-burst and some 4,000 at the Bab El-Wad nursery owing to floods. At Nazareth nursery about 3,000 seedlings were destroyed by the grub of *Melolontha vulgaris.*

35. The vote for the Upkeep of Nurseries was increased from £P.800 to £P.950 to provide for the propagation of carobs as a special feature in the nursery programme based on the intention to raise within some three to four years approximately 100,000 budded carob plants.

36. The varieties propagated comprise forest evergreen and deciduous plants for afforestation, shade and ornamental trees and shrubs for amenity planting, exotics for experimental purposes, and carobs. The principal species raised and their approximate numbers were the following : —

	(Thousands)
Pinus halepensis	513
Acacia cyanophylla	510
Cupressus sempervirens	200
Eucalyptus rostrata	38
Parkinsonia aculeata	30
Casuarina equisetifolia	20
Robinia pseudo-acacia	17
Ailanthus glandulosa	15
Pinus canariensis	7
Celtis australis	6
Schinus molle	5
Pinus insignis	4
Melia azedarach	4
Brachychiton	3
Cupressus arizonica	2
Cupressus macrocarpa	2
Pinus pinea	2
Juglans regia	1
Carobs	45

Larger numbers of plants were raised in nursery beds, in preference to tins and pots, than in previous years. Trials with exotic species were confined mainly to the nurseries at Jerusalem, Tiberias, Nazareth and Acre.

37. Costs of production at the several nurseries are shown in Appendix 14. The average cost at all nurseries was £P.1.053 Mils per thousand which compares with £P.1.648 Mils for the previous year. The variation in cost is due to a variety of circumstances; for instance water at Tiberias nursery costs 10 mils per cubic metre, 30 at Nazareth and 80 at Jerusalem; while the figures for Nazareth include a good deal of terracing work, and at Acre, water installation and other preliminary expenses of a new nursery. At Jerusalem the costs are inflated owing to the use of a large number of exotics and the inclusion of some research work.

38. Twenty five thousand wild olive suckers were extracted departmentally from forest reserves in the Jenin and Nablus sub-districts for issue to Horticultural Stations at Acre, Nablus, and Majdal. The cost of extraction and delivery was £P.96 and was charged to a special item for this purpose. These suckers are to be budded and issued or sold at nominal rates to cultivators in parts of the country where wild suckers are not obtainable in forest reserves. In addition 1,000 olive suckers were obtained from the same source and sold to a private nursery.

VII. Afforestation.

(a) *Government.*

39. Weather conditions were more favourable than for several years. There was a notable improvement in the rainfall as may be seen from the following figures :—

Place	Average mms.	1933/34 mms.	1934/35. mms.
Safad	753.6 (12 years)	633.7	909.5
Tiberias	426.4 (31 years)	351.0	696.0
Acre	585.6 (10 years)	480.0	784.0
Nazareth	611.5 (29 years)	543.0	764.0
Jerusalem	635.3 (87 years)	391.7	509.2
Jaffa	470.6 (9 years)	365.5	707.0
Gaza	369.0 (24 years)	397.1	348.1
Beersheba	192.8 (14 years)	336.3	243.5

Plants made a good start and seeds an excellent germination, but there was a heavy weed growth requiring intensive hoeing, and a general failure of the latter rains with periods of excessively hot, dry weather in the spring. Owing however to the quantity of rainfall, transplants and seedlings, condition and mortality during the summer should be less than usual.

40. Planting and sowing were carried out at 31 Government plantation areas at a total cost of £P.3,449 excluding the cost of plants and seed and the cost of their transport to planting sites. 1,081,914 transplants were used and 2,880 kilogrammes of seed. The total area newly planted was 2,910 dunams and that over which replanting had to be done was 3,395½ dunams. Appendix 8 shows the details of replanting, planting and sowing of new areas and the numbers and kinds of plants used and quantities and kinds of seeds sown. In some instances planting consisted in the filling in of blanks among natural vegetation, in others in the afforestation of areas containing little or no vegetation. With increased skill and experience on the part of Forest Rangers and Guards there has been a tendency towards reduction of costs and a greater percentage of survival. Planting methods remain much the same, except that plants with open-roots raised in nursery beds have been employed in far larger numbers, particularly at Nazareth, Tiberias and Gaza. The Forest Ranger, Nazareth, has obtained good results by preparing ground for planting without opening the planting pits in advance of planting. Some rough terracing has been done and it is proposed to increase the amount of terracing work in planting hill slopes in future. The principal species planted are those which are most likely to succeed under the difficult conditions as indicated by the existing state of silvicultural knowledge and experience. The diversity of local climatic and soil conditions and the absence of trials with exotics under the previous regime has justified the policy of using, though on a small scale, numbers of untried local and exotic varieties in limited plots at almost all plantations. In addition to the forest plantations shown in Appendix 8, plantation work has been undertaken in connection with certain "amenity" schemes described under paragraph 44.

(b) *Afforestation by Private Agencies.*

41. Details of plantations formed by private agencies are given in Appendices 11 and 12. There were 100 areas planted covering 2,218 dunams compared with 88 areas covering 1,658 dunams during the previous year. The total number of private plantations is now 933 with a total area of 32,188 dunams. Many of these private plantations are wood-lots or shelter belts, but in the case of the Jewish National Fund and the Palestine Jewish Colonisation Association larger areas are planted. The following were planted during 1934/35 :—

JEWISH NATIONAL FUND.

Haifa sub-district.	*Dunams.*
Kefar Usha	125
Sdeh Yaakov	85
Mishmar Haemek	70

Nazareth sub-district.	*Dunams.*
Kefar Hahoreish	320

The trees planted at the above areas numbered 164,310, and consisted of Pines, Cypresses, Persian Lilac, Tree of Heaven, Carobs, Parkinsonia and Mulberries.

THE PALESTINE JEWISH COLONISATION ASSOCIATION.

Haifa sub-district.	*Dunams.*	*Species.*
Pardess Hanna	25½	*Pinus pinea.*
" "	50	Eucalyptus.
Cæsarea Sand Dunes	10	Eucalyptus.
Tiberias sub-district.		
Tiberias	250	Pines, Cypresses, Carobs, Acacias, and others.

42. In many instances the proprietors grew the plants for these plantations themselves or purchased them from private nurseries. The Department issued gratis 128,678 plants to private individuals and institutions and it is satisfactory to record that a large number of Arab land owners and cultivators applied for plants. Private agencies which have had the wisdom and foresight to establish plantations during previous years are now reaping substantial benefits not only from products obtained such as firewood, poles, fencing posts, fruit tree supports, etc. but also from sales and from shelter afforded to their fields and orchards. As already indicated in the introduction to this report private planting should be stimulated by the freedom from annual land taxation afforded by the Rural Property Tax. During the year the advisability of subsidising private planting has been tentatively examined. There are considerable possibilities of promoting afforestation on a wide scale in this way; but there are certain difficulties to be overcome. Inter alia, silviculture is not, in the writer's view, sufficiently advanced in Palestine to warrant subsidisation from public funds on anything more than an experimental scale at the present time. State assistance should be confined for the present to the gratis issue of seedlings and transplants and to technical advice. There are factors which may be expected to have an enhanced value as the technical and financial resources of the official forest service expand.

VIII. Amenity Planting.

43. It is not always easy to distinguish between *bona fide* afforestation and "amenity" planting. Many of the plants issued gratis as stated in the preceding section were planted for amenity purposes, but in a country so devoid of trees as Palestine any kind of tree plantation must necessarily have some amenity value, and judging from public comments, forest plantations formed both by official and private agency are much appreciated by many from that point of viwe. In Palestine the official Forest Service is concerned with the æsthetic side of tree planting, a practice which has survived from a time when the Department was in its infancy, and which on various grounds of convenience, appears likely to continue for some time. It should not be forgotten, however, that work of this kind requires specialist knowledge, training, and personnel, and involves a certain diversion of effort and attention from legitimate forest pursuits. Activities under this head are reported as follows :—

(a) *Road-Side Planting Plots.*

44. In the forest section of Departmental estimates for 1934/35 a novel item was introduced under "Special Expenditure" entitled "Road-Side Tree Planting". The intention was to co-operate with land owners with properties adjoining main roads in the planting of trees in the form of groups along stretches of road consisting partly of the road reservation width and partly of strips of land to be provided by the land-owners. As an additional inducement and to

encourage the planting of fruit trees, fruit trees deemed to be appropriate to the localities chosen were to be used in addition to other trees. The scheme was to be regarded as experimental for expansion subsequently in the light of experience. At first land-owners were somewhat sceptical and it was found, in practice, that no land-owner was interested in the planting of mere strips of land. The alternative was, in most cases, to plant small more or less irregularly shaped plots close to main roads. Fencing, cultivation, plants and labour were provided at Government expense, but the owners are expected to maintain plantations after the initial work has been done for them.

45. Details of road-side planting schemes are shown in Appendix 9. There were 10 such schemes: 7 consisted of plots which were planted in co-operation with owners: 2 were in the form of belts of trees planted and maintained by the forest service, and the 10th scheme was carried out in co-operation with the Tiberias Branch of the "Men of the Trees".

(b) *Government House Grounds.*

46. The votes for the gardening staff and upkeep of the grounds are shown on the forest estimates. The total area of the ground is now 175 dunams much of which has been converted under the keen personal interest of the High Commissioner from a barren waste into flower gardens, olive groves, rockeries, tree plantations and shruberies. During the year under report 1,030 plants were issued from forest nurseries, and 1,545 were purchased. Sixty nine kilos of seed of the wild blue lupine (*Lupinus pilosus*) were collected by Forest Guards, as well as quantities of seeds and bulbs of local plants. Sixty mature olive trees were purchased from groves at Beit Jala and transplanted in the grounds. The use of large olive trees has proved to be a remarkably succesful feature and is being copied in other amenity schemes and by individuals so that now in Jerusalem city when old olives have to be moved for building purposes they are transplanted in adjoining gardens instead of being used as fuel. There are now approximately 300 olive trees in the grounds, and it has been demonstrated beyond doubt that old olive trees up to some hundreds of years old can be moved from considerable distances by lorry and transplanted with perhaps less than five per cent of failures.

(c) *Palestine Antiquities Museum.*

47. At this site 135 middle aged olive trees were planted in March, 1935. The trees were obtained from Bethlehem, and the work of uprooting, pruning, and planting was done by the Forest Service from funds provided by the Department of Public Works. The majority of the trees have "taken" roots.

(d) *Arab Training College, Jerusalem.*

48. A belt of 2,450 Alleppo pines and Cypress was planted round the grounds of this building which is still under construction. Funds were provided by the Department of Public Works.

(e) *Miscellaneous.*

49. The Service has been concerned in inspection, issue of plants, and in giving technical advice, etc. in connection with the following :—

Military Camps at Jerusalem and Haifa,
Police Posts, Veterinary Quarantine Stations,
Municipal Road Side Planting at Jerusalem,
Antiquity Sites, Village School Gardens,
Villages, Institutions, and Individuals.

(f) *Amenity Planting by Railways Department.*

50. The excellent planting work carried out by the Department of Railways under the auspices of Mr. F.H. Taylor, District Engineer, Lydda, was continued. The following account is summarized from a report provided by Mr. Taylor :—

A nursery for shade and ornamental trees and flowering shrubs was maintained at Lydda and produced 78,000 plants of 50 varieties. Issues were made as follows :—

Palestine Railway Section Lydda	48,200
Sinai Section	8,360
Haifa District (Palestine and Trans-Jordan)	15,430
Department of Health Haifa Quarantine Station	1,560
Kadoorie Agricultural School Tulkarm	4,150
Royal Air Force and Military	2,000

51. Tree planting on the railway was carried out mainly by permanent way gangs, each ganger being issued with between 100 to 3,000 trees. Some special planting was carried out by the Chief Mechanical Engineer round the Kishon Workshops and by ordinary labourers round new buildings. Some particularly good plantations made by gangers may be seen at Ras el-ʿAin, Isdud, Khan Yunis, and el-Kantara. Planting is of three types :—

(a) Utility planting to protect embankments against erosion and sections of track against sand drift.

(b) Amenity planting to improve the appearance of stations and to beautify the surroundings of staff quarters.

(c) Planting which is partly utility and partly to improve the appearance of the area.

52. Utility planting was carried out on new embankments at Wilhelma, Niana and at Yebna to protect an old bank from scour from flood water which flows parallel to the line and from sand dunes.

At el-Kantara the wind belts planted in previous years were extended. The locality is practically rainless and there are strong winds which carry large quantities of sand. The wind breaks have much reduced the effect of sand storms. A small nursery is being started at el-Kantara to obviate disinfection of plants and earth transported from Palestine insisted on by the Egyptian authorities.

Grasses and desert plants were planted over 67 dunams to reduce sand drift over the railway between Rafah and el-Kantara.

IX. Working Plans.

53. It is a matter for continued regret that in no instance is a forest reserve being managed in accordance with the prescriptions of a working plan. Working plans formulate in detail the management of a forest on a scientific basis for 10 or 20 years ahead and can only be drafted by forest officers with the necessary time and professional training. No Forest Ranger has sufficient technical knowledge for the preparation of working plans, while the Senior Forest Officer is too heavily engaged in routine inspections to be able to devote the time necessary for work of this kind. It is hoped to introduce working plans next year when professionally trained Assistant Conservators are available.

X. Exploitation.

54. Forest Reserves are exploited entirely by licensees either as right-holders extracting domestic requirements or as wood-cutters and charcoal or lime burners who extract produce for trade purposes in towns and villages. Under present circumstances little attention can be paid to silvicultural requirements, although in some cases felling is based on a system of annual coupes under which regeneration from coppice regrowth is secured. Much of the firewood, charcoal and lime consumed in the country is derived from private plantations and moribund olive trees, and from tree growth which is being eradicated on private cultivable lands in course of development. To this extent the exploitation of forest reserves is temporarily reduced or postponed particularly in those areas where land development is most active.

Statistics of production and licences are afforded in Appendices 15, 16, and 17. The number of licences issued was 18,138 compared with 19,956 for the last year. The number of animals licenced to graze increased from 47,419 to 68,358. In Appendix 15 the value of produce derived from forest reserves by rightholders and traders has been estimated. The figure arrived at is £P.5,077 excluding the value of grazing. Assuming that grazing is valued at as a low figure as 100 mils per head per annum, the value of grazing would be £P.6,835. If the revenue on licences be added we get the following indication of the value of forest produce and grazing in forest reserves during the year :—

Estimated value of produce	£P. 5,077
Estimated value of grazing	£P. 6,835
Revenue on licences (forest reserve — Appendix 18).	£P. 561
	£P.12,473

Production from privately owned plantations of timber, firewood, charcoal and lime, was much in excess of production from forest reserves, as will be seen in Appendix 15.

XI. Research.

(a) *Botanical Investigations.*

55. Useful progress has been made during the year in studying the vegetation of comparatively unexplored parts of the country. During a tour in Trans-Jordan and in the Wadi Araba the Director collected 14 specimens, and the Senior Forest Officer collected 50 specimens of 26 species of desert plants in the country south of the Dead Sea. Forest Rangers have been interested in the collection of plant material and in learning something about the flora of their respective ranges. Several specimens were received from Rangers at Gaza, Tiberias, Safad, and Jerusalem. Two botanical tours were made by the Silvicultural Assistant. The first was for the purpose of a rapid botanical survey of the banks of the Jordan and adjoining foot-hills; the second tour was carried out to investigate the flora and ecological conditions on the Tiberias hills in view of the probable need for large scale afforestation in this region. The Silvicultural Assistant has identified a number of plants and furnished information on them for members of other Departments. Liaison with the Botanical Department of the Hebrew University has been maintained by the exchange of visits and material and mutual assistance. Duplicate collections of plants made during the year have been sent to Kew.

(b) *Nursery Investigations.*

56. Nursery beds of transplants of *Pinus halepensis* were maintained through their second year at the Jerusalem nursery without irrigation. Height growth was moderate being only 10 cms. for the year, but the mortality was practically nil, and the plants furnished good sturdy planting stock for planting out in the field. The investigation has demonstrated that this species can be raised in nursery beds as a seedling or transplant with very little water beyond that provided by the rainfall. The practical importance of the investigation is that this species can be raised in flying nurseries at planting sites with a minimum of expense on water and transport and without any expense on plant receptacles.

57. An experiment started the previous year to ascertain the vitality of wild olive suckers was continued and concluded. Wild root suckers were obtained from forest reserves in the Jenin sub-district; they were transported to the main road by camel, and thence by motor lorry to Jerusalem, where they were planted in rows of ten on different dates.

The following figures were recorded :—

Row No. (10 Suckers per row)	Delay in Planting	No. of Suckers Sprouted after : 2 months	4 months	12 months	24 months
1	2 days	1	4	6	7
2	4 days	1	4	5	7
3	6 days	2	2	4	5
4	6 days	1	2	3	4
5	30 days	0	0	1	5

The suckers were watered and hoed once monthly during their second year. The suckers in Row No. 1 and in Row No. 4 had been soaked in water for 24 hours before planting but this had no influence on the date of sprouting nor on the percentage of success. The experiment showed that the best results were obtained with immediate planting, but there was little difference in results with a delay from 6 to 30 days, and it was also shown that olive suckers retain vitality in the ground over a period of two years.

(c) *Diseases and Pests at Nurseries.*

58. Numbers of seedlings succumbed to "damping off". Specimens were sent to Dr. I. Reichert, Chief Plant Pathologist of the Jewish Experimental Station at Rehovoth for identification, with the follwing results :—

Species Attacked.	Nursery.	Causative Agent.
Pinus halepensis	Bab el-Wad.	*Fusarium sp.*
Ceratonia siliqua	Bab el-Wad.	*Fusarium sp.*
Cupressus sempervirens	Agricultural School, Tulkarm.	*Fusarium sp.*
Thuya orientalis	Tiberias.	*Fusarium sp.*
Ceratonia siliqua	Tiberias.	*Rhizoctonia solani.*
Pinus halepensis	Agricultural School, Tulkarm.	*Fusarium sp.*

Insect pests have been identified by the Government Entomologist as follows :

Pinus halepensis	Nazareth	*Melolontha vulgaris*
Ceratonia siqua	Wad El-Kuff	*Aspidiotus heedae.*

(d) *Transplanting Old Olive Trees.*

59. Reference has been made elsewhere in this report to the feasibility of transplanting young, middle aged and aged olive trees. During the past two years approximately 400 trees have been transplanted varying in estimated age from 20 to perhaps 150 years. Points on which success depends appear to be :—

(a) Selection of good trees with undamaged bark, unattacked by insects.
(b) Excavation with care of the main root.
(c) Transplantation during the rainy season from November to April.
(d) Heavy pruning of the branches and removal of foliage.
(e) Preparation in advance of good deep planting holes.
(f) Abundant watering after planting and during the first summer.

The effect on the productivity of large olive trees transplanted in this way is not yet known. Trees moved 2 years ago however are now observed to be fruiting.

(e) *Growth Measurments.*

60. Measurments of rate of growth were made as follows :—

(i) *Eucalyptus rostrata* plantation at Manshiyya, Acre.
(ii) *Casuarina equisetifolia* under irrigation at Beisan.
(iii) *Casuarina equisetifolia* non-irrigated at Beisan.
(iv) *Eucalyptus rostrata* non-irrigated at Beisan.
(v) *Pinus halepensis* at Jerusalem.

(f) *Introduction of Exotics.*

61. Appendix 24 shows the names of some 220 varieties of seeds of forest and ornamental trees and shrubs, creepers and flowers introduced for trial, the majority being obtained gratis through the medium of the Seed Exchange Bureau. The seeds are issued to appropriate nurseries the seedlings being used to form small sample plots in plantations or for planting at arboreta, or for issue to private institutions and individuals.

62. Arboreta are maintained as follows :—
Acre Stud Farm, including an arboretum of mixed species, and an arboretum containing Eucalyptus only.
Napoleon's Hill Plantation, Acre.
Nazareth Nursery.
Tiberias Nursery.
Mt. Tabor Kadoorie Agricultural School.
Tulkarm Kadoorie Agricultural School.
Jerusalem Horticultural Station.
Sarafand Citrus Station.

There are also a number of privately owned arboreta where exotics are under trial.

63. Experimental forest plantations are being maintained at :—

(i) Khan el-Abyad — Jerusalem sub-district.
(ii) Khan el-Ahmar — Jerusalem sub-district.
(iii) Rafah — Gaza sub-district.
(iv) Gaza Sand Dunes — Gaza sub-district.
(v) Jabalia Sand Dunes — Gaza sub-district.
(vi) Acre Sand Dunes — Acre sub-district.
(vii) Napoleon's Hill — Acre sub-district.
(viii) Beersheba — Beersheba sub-district.

Nos. (i), (ii), (iii), and (viii) have been established in an attempt to grow trees in arid areas with a very low rainfall where there is little or no vegetation. Nos. (iv), (v), and (vi) have been formed for the purpose of experimental work on sand dune reclamation. The Napoleon's Hill plantation has been divided into 10 dunam plots containing different species of Pines, Carobs, Casuarina, and *Robinia pseudo-acacia.*

XII. Carobs.

64. Production of the carob bean as a means of supplementary local supplies of food for animals, for distillation at local alcohol factories, and for sale as a cash crop, has been taken up during the past two years with increasing intensity by the Forest Service. Activities have taken the followin lines :—

(a) An approximate survey of carob trees in the country, wild and grafted, in forest reserves and in private properties.
(b) The issue of an illustrated pamphlet on carob propagation and grafting.
(c) Propagation of carob seedlings at nurseries for subsequent budding.
(d) Budding of wild trees in forest reserves.
(e) Planting of carob seedlings and sowing of seed in forest reserves.
(f) Establishment of small demonstration carob plantations.
(g) Issue of carob seedlings or budded plants gratis to the public.

65. The work was started on modest lines in the spring of 1933 and has been further developed during the financial year 1934/35. During the spring and autumn of last year 7,199 trees in reserves were budded partly with local budwood of good types and partly with budwood imported from the best carob localities in Cyprus. Owing to the very dry weather last year only about 50 per cent of the buds took successfully. This year the vote was increased from £P.200 to £P.600 and about 12,000 trees in 10 reserves, including rebudding of last year's failures, were budded in the spring. Recent reports indicate that operations have attained a higher percentage of success than last year. A thousand sticks of budwood were imported from Cyprus and delivered with all possible speed to budding centres. The more important areas have been declared "closed forest areas" and placed under charge of Ghaffirs who prevent damage by cattle and will be used to prune and bud more trees and to cultivate and terrace trees as may be required.

66. Demonstration Carob Plots have been established as follows :—

Napoleon's Hill Plantation, Acre sub-district.	— 10 dunams.
Farradiyya Horticultural Station, Safad sub-district.	— 10 dunmas.
Meirun Forest Reserve, Safad sub-district.	— 15 dunams.
Mt. Tabor Agricultural School, Nazareth sub-district.	— 11 dunams.
Tulkarm Agricultural School, Tulkarm sub-district.	— Avenue trees.
Horticultural Station Nablus, Nablus sub-district.	— 4 dunams.
Acre Experimental Station, Acre sub-district.	— Avenue trees.
Dura Village School, Hebron sub-district.	— 12 dunams.
Nazareth Nursery, Nazareth sub-district.	— 6 dunams.

Seedlings were issued for planting in these plots from forest nurseries and these will be budded in situ as soon as the plants are large enough. A number of seedlings of carob have also been planted in certain of the road-side plots (see Appendix 9).

67. Carob seedlings issued from nurseries during the last rainy season numbered 10,884. These were planted in forest plantations and reserves, at schools, and on lands of private persons. The balance in stock at nurseries after these issues had been made was 34,647 and sufficient seed has been sown to produce 80,000 additional seedlings. The programme in view is the production of 100,000 budded carob plants at nurseries within 3 years.

68. Carob trees commence production within 5 years after budding and yield annually an average of 200 to 300 kilogrammes per tree. Imports last year amounted to 300 tons. The tree is not exacting as to soil requirements and can be grown all over Palestine except in the southern arid regions where there is insufficient rain, and in the highest parts of the Safad area where the climate is too cold. There is no doubt that with perseverance on the lines described above a large production of a very useful and valuable crop can be attained within a few years.

XIII. Olive Planting.

69. In paragraph 38 reference has been made to the extraction of wild olive suckers for cultivation and grafting at Horticultural Stations and subsequent issue to the public. Appendix 19 shows the details of olive suckers planted directly by the public, the material being obtained either from forest reserves under licence or from privately owned trees.

XIV. Education.

70. Facilities for education in plant propagation, forest nursery operations, planting, and general elementary forestry are now available at a number of institutions. The following are summarised reports of the Principals of the Government Kadoorie Agricultural Schools:—

MOUNT TABOR SCHOOL.

71. 57 dunams have been planted with 8,713 trees of 17 varieties including Pines (3 kinds), Cypresses (2 kinds), Acacias (2 kinds), Eucalyptus, Olives, Carobs, Persian lilac, Parkinsonia, *Schinus molle, Morus alba,* Poinciana, Casuarina, Washingtonia. 2,300 metres of avenue were planted with 1,198 trees.

The nursery at the school raised 14,485 plants, including 1,000 carobs.

Hill lands belonging to the school on which there is some natural forest have been improved by pruning and cultivation of existing oaks and planting of new trees; the botanical composition of this forest was studied.

TULKARM SCHOOL.

72. Lectures on silviculture are regularly given, and there are a nursery, plantation, and arboretum in the school grounds. In the plantation 2,174 trees have been planted, while the arboretum containes 69 different species of trees and shrubs. Part of the Ras Amer forest reserve, 10 kilometres distant, has been allotted to the school for terracing and planting of forest trees. In this area 1,712 plants of Pine, Cypress, and Carobs have been planted and seed sown of *Pinus pinea.*

73. Elementary forestry is taught at the Mikveh Agricultural School and at the Orphan School of the Salesian Order at Beit Jemal. At both these schools nurseries, plantations, and arboreta are maintained. Propagation of plants is also taught in practical form at the Nahalal Girls Agricultural School and at a number of Girls' Farms operated by the Jewish Labour Federation.

XV. Financial Statement.

74. The expenditure for the year is shown in Appendix 23. The figures do not strictly represent the expenditure of forestry since the whole of Deputy Director's salary is included as well as items not normally chargeable to a forest budget. In accordance with Treasury instructions received during the year transport of plants and seeds and all materials used in propagation, planting and sowing, fencing, demarcation and survey, etc. were charged to item Transport and Travellingl instead of to the relevant items.

75. Revenue realised £P.4,630.043 mils being £P.176,997 mils less than the previous year. Forest licences were issued by District Officers who were responsible for revenue collection.

F. J. Tear

Deputy Director of Agriculture and Forests...
(Conservator of Forests).

LIST OF APPENDICES.

1. Forest Legislation 1934/35.
2. Forest Reserves gazetted during the period 1925/26 to 1934/35.
3. Demarcation and Survey of Forest Reserves and Forests proposed for reservation 1934/35.
4. Schedule of Forest Reserves demarcated and surveyed to 31st March, 1935.
5. Survey of Departmental Forest Plantations 1934/35.
6. Schedule of Surveys, etc. undertaken by Forest Surveyors for Other Services 1934/35.
7. List of Fences erected by the Forest Service during 1934/35.
8. Schedule of Government Plantation areas 1934/35.
9. Schedule of Road-Side Planting Plots 1934/35.
10. Stock at Government Forest Nurseries at 1st October, 1934.
11. Private Forest Plantations formed during 1934/35.
12. Schedule of Private Forest Plantations as at 31st March, 1935.
13. Plants issued and sold from Government Forest Nurseries 1934/35.
14. Analysis of Expenditure at Government Forest Nurseries 1934/35.
15. Statement of Total Forest Production 1934/35.
16. Animals licensed to graze in Forest Reserves 1934/35.
17. Forest Licences issued during 1934/35.
18. Forest Revenue by Categories of Produce 1934/35.
19. Olive Propagation 1934/35.
20. Balance of Trade in Forest Products 1934/35.
21. Forest Offences 1934/35.
22. Forest Fires 1934/35.
23. Statement of Expenditure 1934/35.
24. List of Exotics introduced 1934/35.
25. List of Seeds issued from Exchange Bureau 1934/35.
26. List of Plant Material collected and purchased locally 1934/35.

Appendix No. 1.

FOREST LEGISLATION 1934/35

Under the Forest Ordinance, 1926.	Notice, Regulation, Proclamation etc.	Palestine Gazette	
		No.	Date
Proclaiming Forest Reserve No. 191 as cancelled	Proclamation	452	12. 7.34
Declaring parts of Forest Reserves Nos. 50, 109, 44, 12 and 13 to be "Closed Forest Areas"	Declaration	472	18.10.34
Declaring parts of Forest Reserve No. 186 and Forest Reserve No. 185 to be "Closed Forest Areas"	Declaration	482	27.12.34
Proclaiming Forest Reserve No. 235	Proclamation	495	21. 2.35
Proclaiming Forest Reserve No. 236	Proclamation	500	28. 3.35
Proclaiming Forest Reserve Nos. 237 to 240	Proclamation	497	7. 3.35

Appendix No. 2.

FOREST RESERVES GAZETTED DURING THE PERIOD 1925/26 — 1934/35

District and Sub-District	Gazetted during the Period 1925/26 to 1933/34.		Gazetted during 1934/35.		Total at 31st March, 1935.	
	No. of Reserves	Approximate Area in Dunams	No. of Reserves	Approximate Area in Dunams	No. of Reserves	Approximate Area in Dunams
NORTHERN DISTRICT						
Haifa	49	98,742	1	81	50*	98,823
Acre	13	77,904	—	—	13	77,904
Nazareth	33	82,000	3	3,436	36	85,436
Tiberias	15	16,976	—	—	15	16,976
Nablus	9	81,805	—	—	9	81,805
Jenin	23	229,000	—	—	23	229,000
Tulkarm	6	9,138	—	—	6**	9,138
Safad	3	4,700	1	1,964	4	6,664
Total Northern District	151	600,265	5	5,481	156	605,746
SOUTHERN DISTRICT						
Jerusalem	9	9,384	—	—	9	9,384
Bethlehem	1	400	—	—	1	400
Ramallah	3	1,300	—	—	3	1,300
Jericho	1	3,500	—	—	1	3,500
Ramle	15	11,800	1	906	16	12,706
Hebron	52	36,960	—	—	52	36,960
Gaza	2	32,058	—	—	2	32,058
Total Southern District	83	95,402	1	906	84	96,308
GRAND TOTAL	234	695,667	6	6,387	240	702,054

* Includes one reserve regazetted — 775 dunams.

** Includes one reserve No. 191 of an area of 1,571.5 metric dunams which has been revoked.

DEMARCATION AND SURVEY OF FOREST RESERVES AND FORESTS PROPOSED FOR RESERVATION 1934/35

Name	No. of Forests	Area of Forest	No. of Cultivated Plots.	Area of Cultivated Plots	Area of Plantation	Total Area	Length of External Boundaries	No. o Boundary Marks	Serial No. of Reserve	Observations
		in metric dunams					in metres			
Ras El-Mal	1	1,700	—	—	—	1,700	6,700	32	101	Old reserve demarcated and surveyed.
Wadi Et-Tuffah	1	2,160	1	40	—	2,200	12,000	70	103	— do — (Carob Budding Area)
Ras El-Khabieh	1	700	1	37	—	737	3,000	31	123	Old reserve demarcated and surveyed.
Karm Haddad	1	750	1	110	—	860	3,000	20	124	— do —
Khallet Marj El-Assi	1	250	—	—	—	250	400	6	125	— do —
Jebel El-Tawil	1	1,340	2	123	—	1,463	8,500	40	126	— do —
Ard El-Mulk	1	1,206	2	214	—	1,420	8,300	38	127	— do —
Jebel Toran	4	16,448	8	446	—	16,894	32,000	153	150	— do —
El-Farsh	2	3,455	1	22	—	3,477	10,000	53	128	— do —
Dahr Saqab	1	81	—	—	—	81	2,300	13	240	New area.
Kummane	1	4,000	2	500	—	4,500	15,000	75	—	Demarcated and surveyed prior to reservation. Not yet completed.
Subeih	2	2,000	1	5	—	2,005	6,000	52	90	Demarcated. Survey not yet completed. Figures given are approximate.
Ard Abu Zeida	1	10	—	—	—	10	420	4	207	Old reserve demarcated and surveyed.
Umm Ammud	1	32	—	—	—	32	810	5	208	— do —
Jebel Maasara	1	132	—	—	—	132	2,470	18	209	— do —
Sheikh Barrak	1	422	1	6	—	428	5,400	26	210	— do —
Sheikh Abdallah	2	33	—	—	—	33	1,350	9	211	— do —
Sheikh Salman	1	184	—	—	—	184	4,570	23	212	— do —
Jebel Khallet Oudeh	1	27	—	—	—	27	680	8	213	— do —
Jebel Abu Rheim	3	1,437	3	12	—	1,449	19,990	84	214	— do —
Jebel Wadi Khalabieh	1	89	—	—	—	89	500	10	75	— do —
Jebel Rassem El-Kbir	2	144	—	—	—	144	750	18	186	— do —
Jebel Khallet Ismail	2	158	—	—	—	158	800	20	187	— do —
Asluj	1	868	—	—	20	888	4,600	10	—	New area demarcated and surveyed prior to reservation.
TOTAL	34	37,626	23	1,515	20	39,161	149,540	818		

APPENDIX No. 4.

SCHEDULE OF FOREST RESERVES DEMARCATED AND SURVEYED TO 31st MARCH, 1935

Sub-District	No. of Proclaimed Reserves	Number of Reserves		Balance Awaiting Demarcation or Survey or Both
		Demarcated and Surveyed	Demarcated Only	
Haifa	49	48	1	1
Acre	13	2	4	11
Nazareth	36	20	—	16
Tiberias	15	11	—	4
Nablus	9	—	—	9
Jenin	23	1	—	22
Tulkarm	6	5	—	1
Safad	4	1	—	3
Jerusalem	9	9	—	—
Bethlehem	1	1	—	—
Ramallah	3	3	—	—
Jericho	1	—	—	1
Ramle	16	16	—	—
Hebron	52	49	—	3
Gaza	2	1	—	1
TOTAL	239	167	5	72

APPENDIX No. 5.

SURVEY OF DEPARTMENTAL FOREST PLANTATIONS 1934/35

No.	Name of Plantation	Area Surveyed in Metric Dunams	Observations
	NORTHERN DISTRICT		
1	Balad esh-Sheikh	163	In Forest Reserve No. 194
2	Acre Sand Dunes	109	In Forest Reserve No. 2
3	Napoleon's Hill	52	Afforestation State Domain
4	Ailut (Baharan)	138	In Forest Reserve No. 132
5	Sertaba North	50	In Forest Reserve No. 95
6	Sertaba South	30	In Forest Reserve No. 95
7	Jabal Aqaby	40	In Forest Reserve No. 215
8	Yaffa	242	In Forest Reserves Nos. 229 & 230
9	Safad Castle	12	Afforested State Domain
10	Maddad North	99	In Forest Reserve No. 199
11	Maddad South	5.5	In Forest Reserve No. 200
12	Tiberias South	50	In Forest Reserve No. 190
13	Ard El-Jardon	50	In Forest Reserve No. 201
	SOUTHERN DISTRICT		
14	Jebel Harsis	165	In Forest Reserve No. 202
15	Safhat Wad Ali	10	In Forest Reserve No. 167
16	Khan El-Ahmar	21	Experimental Plantation
17	Khan El-Abyad	5.5	Experimental Plantation
18	Jebel Kubrah (Wad El-Kuff)	170	In Forest Reserve No. 152
19	Jebel Khallet Ismail	172	In Forest Reserve No. 187
20	Deir Nakhas	419	In Forest Reserve No. 186
21	Kurnet Ain El-Kawabish (Um Safa)	115	In Forest Reserve No. 55
22	Karn El-Dibe	405	In Forest Reserve No. 61
23	Khirbet Rabieh	156	In Forest Reserve No. 58
24	Ghosheineh	260	In Forest Reserve No. 64
25	Abu Liwez	386	In Forest Reserve No. 79
26	Gaza Sand Dunes	813	In Forest Reserve No. 121
	TOTAL	4,138	

Appendix 6.

SCHEDULE OF SURVEYS, ETC. UNDERTAKEN BY FOREST SURVEYORS FOR OTHER SERVICES 1934/35.

No.	Name of Area	Nature of Work	Area in Dunams	No. of Plots	No. of Days Spent	Service Concerned
1.	Acre Citrus Station	Laying out boundaries	40	1	2 days by one Surveyor.	Horticulture.
2.	Farwana Horticultural Station	Preparation of a contour map for irrigation purposes.	100	3	16 " " " "	"
3.	Majdal Agricultural Station	Preparation of a contour map for irrigation purposes.	60	3	10 " " " "	"
4.	Dura School	Survey of boundaries.	88	1	3 " " " "	Administration.
5.	Dura Agricultural School.	Survey of boundaries.	189	32	5 " " " "	"
6.	Dahariyeh School	Survey of boundaries.	20	1	2 " " " "	"
7.	Mount of Olives Scheme.	Survey of properties of different owners and inserting Town Planning Roads Scheme on the map.	545	63	17 " " " "	"The Men of the Trees Association".
8.	Dipping Tank at Halhul.	Drawing and laying out of the tank.	—	1	2 " " " "	Veterinary.
9.	Acre Stock Farm	Survey of extension area.	100	1	3 " " " "	"
10.	Kafr Anan Agricultural Station	Survey of boundaries and drawing of map.	200	1	2 " " " "	Agriculture.
		Total :	1,342	107	62 days.	

No.	Name of Plantation	Fence in Metres	Area Fenced in metric dunams	Expenditure £P. Mils	Metre. Mils	Situation	Observations
1	Yaffa in Forest Reserves Nos. 229 & 230.	4,640	508.000	303.100	65.3	On the Nazareth Hills, along both sides of the Nazareth-Affula main road, about 3 kilometres south of Nazareth town.	
2	Meirun in Forest Reserve No. 235.	1,700	130.000	95.834	56.3	Along the Safad-Haifa main road and about 7 kilometres from Safad town.	
3	Wad El-Kuff in Forest Reserves Nos. 152 & 153.	160	5.000	11.139	69.6	Along the Hebron-Beit Jibrin road in Wadi El-Kuff, about 8 kilometres west of Hebron town.	
4	Umm Safa in Forest Reserve No. 55.	460	30.000	30.824	67.0	Along the Ramallah-Umm Safa road, about 28 kilometres from Ramallah town.	
5	Deir Nakhas in Forest Reserves Nos. 186 & 187.	300	20.000	18.982	63.3	Along the Hebron-Beit Jibrin road, about 15 kilometres west from Hebron town.	
6	Bassat Kakun in Forest Reserve No. 188.	650	40.000	22.900	35.2	About 12 kilometres west of Tulkarm town.	For this fence Eucalyptus posts extracted from Government Plantations were used as fencing posts.
7	Asluj	602	23.000	42.280	70.2	Along the Beersheba-Asluj road about 15 kilometres south of Beersheba town.	Experimental Plantation for Sand Dune Reclamation.
8	Dura School.	1,180	88.000	72.799	61.7	Dura viallage Hebron sub-district	A plantation formed on the ground of the Dura village School.
9	Haifa-Acre Road.	3,000	6.000	146.462	48.8	On both sides of the Haifa-Acre road between Kilometres 15-16.	Roadside Planting.
10	Arrabe.	400	7.500	28.934	72.2	On the Nablus-Jenin road at Kilostone 99.	" "
11	Deir Esh-Sharaf	295	5.071	21.727	73.5	Opposite the junction of Nablus-Jenin and Nablus-Tulkarm roads.	" "
12	Huwwara	250	3.378	18.420	73.5	On the Jerusalem-Nablus road at Kilostone 56.	" "
13	El-Bira	446	7.400	29.335	65.7	On the Ramallah-Nablus road between kilos 18-19.	" "
14	El-Qubab	324	4.500	22.888	70.6	On the Jerusalem-Jaffa road at Kilostone 33.	" "
15	El-Malufia	100	2.000	5.677	56.7	On the Jerusalem-Ramallah road 250 metres north of Kilostone 13.	" "
16	Tiberias.	800	14.000	16.360	20.4	On the Tiberias-Samakh road just outside Tiberias town.	" "
		15,307	893.849	887.661			

Average cost of fencing per dunam — 993 mils.
Average cost of fencing per metre — 58 mils.

SCHEDULE OF GOVERNMENT PLANTATION AREAS 1934/35

Serial No.	Name of Plantation	Situation	Year Planting Commenced	Total Area in dunams	Planted up to 1933/34	Newly Planted in 1934/35	Replanted in 1934/35	No. of Trees Planted 1934/35 by Species	
1	Safad Castle State Domain.	Safad Sub-District at Safad town.	1925	30.5	23	—	3	Robinia pseudo-acacia 500 Cercis siliquastrum 50 Celtis australis 500	1,050
2	Meirun Forest Reserve No. 235.	Safad Sub-District, near Meirun village, adjoining the Safad-Acre road.	1934/35	1,964	—	400	—	Part of the Meirun Forest Reserve, 1,964 dunams, newly taken up for afforestation in 1934 — the most northern Government plantation and has the highest rainfall. 3,400 plants of pinus halepensis, Cupressus sempervirens, and Eucalyptus rostrata from the Nazareth Nursery were planted. Of the Pinus halepensis 300 were naked-rooted plants from nursery beds. Seed germination was 80% — seedlings and transplants are promising. Seed Sown: 1,000 kilos Pinus pinea 8 kilos Carob.	
3	Napoleon's Hill State Domain.	Acre Sub-District, on Acre Stock Farm lands, adjoining the Acre-Safad road.	1933/34	93	52	23	25	Divided into 10 plots approximately 9 1/3 dunams each. The soil is rather shallow overlying fairly hard sand stone and there is considerable exposure to wind. Plants planted in 1934/35 were :— Pinus canariensis 1,900 Pinus insignis 550 Carbos 1,700 Eucalyptus (12 varieties) 518	4,668
								Plot No. 9 sown with Pinus pinea during the previous year was resown with the same species. Part of the plantation is intended for an arboretum. In this some 70 plants of 27 different species were planted.	

		berias-Migdal road.							
								Melia azedarach	950	
								Acacia cyanophylla	20,803	
								Pinus halepensis	1,360	
								Brachychiton populeum	1,240	
								Carobs	100	
								Cercis siliquastrum	238	
								Cupressus macrocarpa	201	
								Schinus molle	263	
								Casuarina equisetifolia	466	
								Retama roetam	310	
								Tetraclinis articulata	300	32,731
								and small numbers of Acacia lophantha, pycnantha, mellifera, arabica, Gleditschia triacanthos, Laurus nobilis, Eucalyptus albens, leucoxylon, longifolia, & resinifera; 18 kilos of seed were sown experimentally, viz: Acacia cyanophylla, Ailanthus glandulosa, Quercus aegilops, Carob, Almond.		
5	Tiberias South Forest Reserve No. 190.	Tiberias Sub-District on the hills opposite the Tiberias Hot Baths.	1927/28	1,147	160	75	40	All plants used except 63 were from nursery beds :—		
								Parkinsonia aculeata	7,000	
								Robinia pseudo-acacia	1,000	
								Ailanthus glandulosa	1,000	
								Melia azedarach	1,000	
								Acacia cyanophylla	25,000	
								Acacia mellifera	10	
								Gleditschia triacanthos	60	
								Acacia lophantha	200	
								Acacia pycnantha	48	
								Celtis australis	200	
								Carob	100	
								Cupressus horizontalis	160	
								Quercus aegilops	43	
								Eucalyptus crebra	20	
								Eucalyptus gomphocephala	20	
								Eucalyptus alba	2	
								Eucalyptus piperita	5	35,868

Serial No.	Name of Plantation	Situation	Year Planting Commenced	Total Area in Dunams	Planted up to 1933/34	Newly Planted in 1934/35	Replanted in 1934/35	No. of Trees Planted 1934/35 by Species		
6	Ard El-Jardon Forest Reserve No. 201.	Tiberias Sub-District about 5 kilos south of Tiberias town on hills opposite Tiberias-Samakh main road.	1927/28	188	96.5	63	10.5	Plants mostly open-rooted were used, viz :—		
								Acacia cyanophylla	21,000	
								Ailanthus glandulosa	1,000	
								Melia azedarach	1,000	
								Parkinsonia aculeata	10,000	
								Acacia pycnantha	50	
								Robinia pseudo-acacia	1,000	
								Celtis australis	1,000	
								Gleditschia triacanthos	100	
								Acacia mellifera	10	
								Pinus halepensis	500	
								Carobs	100	
								Cordia myxa	25	
								Cupressus pyramidalis	277	
								Dalbergia sissoo	12	
								Brachychiton	500	
								Eucalyptus salmonopholia	20	
								Eucalyptus lehmani	20	
								Eucalyptus leptophloeba	20	36,634
								18 kilos of the 5 species shown in 4 and 5 were sown.		
7	Yaffa Forest Reserve No. 230.	Nazareth Sub-District on the hills facing the plain of Esdraelon adjoining the Balfour forest.	1933/34	64	102	266	30	Pinus halepensis	72,500	
								Cupressus pyramidalis	5,000	
								Cupressus horizontalis	2,400	
								Eucalyptus rostrata	2,000	
								Casuarina equisetifolia	1,000	
								Acacia cyanophylla	2,000	
								Acacia pycnantha	80	
								Acacia mellifera	45	
								Robinia pseudo-acacia	4,500	
								Melia azedarach	600	
								Celtis australis	500	
								Cercis siliquastrum	130	
								Gleditschia horrida	40	
								Gleditschia triacanthos	40	90,835

	Forest Reserve No. 229.	on the hills facing the plain of Esdrælon adjoining the Nazareth-Affula main road.						
9	Aqaba Forest Reserve No. 215.	Nazareth Sub-District about 3 kilos south of Nazareth town adjoining the Nazareth-Affula main road.	1932/33	316	316	—	30	Pinus halepensis 7,500.
10	Jabal Qafze Forest Reserve No. 206.	Nazareth Sub-District on the hills facing the plain of Esdrælon east of Jabal Qafze.	1934/35	602	—	200	—	During 1934/35 afforestation was commenced with the sowing of Pinus pinea seed in soil spots and pockets at the rate of 4 kilos per dunam. The seed was sown at the commencement of the rains during the last 10 days of November, 1934. A belt of 5,000 Aleppo pine trees was also planted along the southern boundary.
11	Sertaba Forest Reserve No. 95.	Nazareth Sub-District 7 kilos south of Nazareth town, 2 kilos South of Ain Mahil village.	1926/27	1,620	332	—	50	During 1934/35 50 dunams were resown with seed of Pinus pinea at the rate of 4 kilos per dunam.
12	Baharan Forest Reserve No. 132.	Nazareth Sub-District 3 kilos north-west of Nazareth town near the village of Ailut.	1927/28	663	473	80	40	In 1934/35 40 dunams were resown and 80 newly sown with seed of Pinus pinea at the rate of 4 kilos per dunam. Excellent growth of Pinus pinea, Walnuts, Pinus halepensis, Acacia cyanophylla, Ailanthus glandulosa, Eucalyptus angulosa and Cedars planted in earlier years is reported.

Serial No.	Name of Plantation	Situation	Year Planting Commenced	Total Area in Dunams	Planted up to 1933/34	Newly Planted in 1934/35	Replanted in 1934/35	No. of Trees Planted 1934/35 by Species		
13	Ras Amer West Forest Reserve No. 216.	Tulkarm Sub-District 10 kilos south of Tulkarm town, adjoining main road to Qalqilya	1932/33	96	96	—	20	Pinus halepensis	9,000	
								Cupressus sempervirens	200	
								Robinia pseudo-acacia	700	
								Ailanthus glandulosa	100	
								Celtis australis	50	
								Acacia cyanophylla	900	
								Acacia farnesiana	300	11,250
14	Bassat Kakun Forest Reserve No. 188.	Tulkarm Sub-District 10 kilos west of Tulkarm town.	1926/27	69	49	20	65	This plantation is in the form of a belt 12 metres wide round the boundary of the main area which is used for the production of hay:—		
								Eucalyptus rostrata	3,000	
								Carobs	110	
								Pinus canariensis	141	
								Pinus insignis	250	
								Eucalyptus crebra	30	
								Eucalyptus gomphocephala	100	
								Eucalyptus diversicolor	30	
								Eucalyptus hemiphloia	100	
								Eucalyptus lehmani	30	
								Eucalyptus leptophloeba	100	
								Eucalyptus leucoxylon	50	
								Casuarina equisetifolia	40	3,981
15	Balad esh-Sheikh Forest Reserve No. 194.	Haifa Sub-District on the Carmel hills 2½ kilos from Neve Shaanan Quarter.	1929/30	1,163	653	—	100	During 1934/35, 100 dunams containing blanks were resown with 300 kilogrammes of Pinus pinea. 2 dunams were sown with seed of carob.		
16	Um Safa Forest Reserve No. 55.	Ramallah Sub-District near Um Safa village.	1924/25	402	402	—	137	117 dunams were replanted with:—		
								Pinus halepensis	18,200	
								Cupressus sempervirens	3,700	18,200

17	Bab el-Wad Forest Reserves Nos. 151, 167, and 202.	Jerusalem Sub-District on the Jerusalem - Jaffa road between kilos 19 and 24.	1926/27	2,352	2,352	—		commenced in 1926/27, 1928/29, & 1931/32. During 1934/35 only replanting of failures was required and this was done over 640 dunams with 40,000 plants of Pinus halepensis.
18	Wad el-Kuff Forest Reserves Nos. 152 and 153.	Hebron Sub-District at kilo 40 on the Hebron-Beit Jibrin road .	1926/27	834	828	6	160	The plantation consists of 2 forest reserves. During 1933/34 160 dunams of scattered blanks were replanted with :— Pinus halepensis 20,000 Walnuts 100 20,100
19	Deir Nakhas Forest Reserves Nos. 185, 186 and 187.	Hebron Sub-District at kilo 52 on the Hebron-Beit Jibrin road.	1932/33	1,811	1,011	800	419	The plantation covers three forest reserves. Cupressus pyramidalis 35,000 Pinus halepensis 82,000 Cupressus horizontalis 25,000 Ailanthus glandulosa 3,000 Celtis australis 1,500 Acacia cyanophylla 800 Robinia pseudo-acacia 200 Olives 1,500 149,000
20	Ajjur Forest Reserves Nos. 75 and 77.	Hebron Sub-District within the boundaries of Ajjur village.	1934/35	706	—	706	—	Pinus halepensis 36,000 Cupressus horizontalis 27,000 Acacia cyanophylla 1,500 Ailanthus glandulosa 1,000 Robinia pseudo-acacia 600 Walnuts 100 66,200
21	Dura School	Hebron Sub-District on land belonging to the Dura village school.	1932/33	665	2.5	64	—	Pinus halepensis 3,700 Cupressus spp. 500 Carobs 350 Olives 100 Robinia pseudo-acacia 120 4,770

Serial No.	Name of Plantation	Situation	Year Planting Commenced	Total Area in Dunams	Planted up to 1933/34	Newly Planted in 1934/35	Replanted in 1934/35	No. of Trees planted 1934/35 by Species		
22	Karn el-Dibeh Forest Reserve No. 61.	Ramle Sub-District near Deir Aban village.	1924/25	1,188	1,188	—	88	Pinus halepensis	30,000	
								Cupressus sempervirens	7,500	
								Carobs	500	
								Robinia pseudo-acacia	100	
								Pinus canariensis	250	
								Pinus insignis	100	
								Pinus pinea	200	38,650
23	Khirbet Rabiah	Ramle Sub-District near Deir Aban village	1923/24	437	437	—	90	Pinus halepensis	9,000	
								Cupressus pyramidalis	1,500	
								Robinia pseudo-acacia	500	
								Pinus canariensis	500	
								Pinus insignis	100	
								Pinus pinea	500	12,100
24	El-Ghusheneh Forest Reserves Nos. 64, 65, and 67.	Ramle Sub-District near Beit Atab village	1922/23	1,524	1,470	54	116	Pinus halepensis	38,000	
								Cupressus verticalis	12,000	
								Robinia pseudo-acacia	100	
								Pinus insignis	100	
								Pinus pinea	318	50,518
25	Abu Liwez Forest Reserve No. 79.	Ramle Sub-District near Sifleh village	1932/33	566	490	76	34	Pinus halepensis	20,000	
								Cupressus pyramidalis	7,500	
								Robinia pseudo-acacia	500	
								Pinus canariensis	500	
								Pinus insignis	100	
								Pinus pinea	200	28,800

26	Gaza Sand Dunes Forest Reserve No. 121	Gaza Sub-District south of main road from Gaza to the Sea.	1925/26	1,891	1,885			Eucalyptus	328,690 14,200	342,890
27	Jabalya Sand Dunes Forest Reserve No. 122.	Gaza Sub-District north of main road form Gaza to the Sea.	1926/27	30,000	597	—	230	Acacia cyanophylla Eucalyptus rostrata Leucaena glauca Dalbergia sissoo	70,000 1,000 1,000 500	72,500
28	Khan El-Ahmar Experimental Plantation State Domain.	Jerusalem Sub-District at kilo 20 on the Jerusalem-Jericho road.	1926/27	24	20	—	12	Tetraclinis articulata Acacia saligna Acacia siberiana Acacia mellifera Acacia longifolia Acacia cyanophylla Pinus halepensis Carobs Eucalyptus crebra Eucalyptus gomphocephale Eucalyptus diversicolor Eucalyptus hemifolia Eucalyptus leptophoeba Eucalyptus salmonophloia Eucalyptus albens	10 300 5 20 30 5,000 1,000 4 25 100 10 100 30 150 30	6,814
29	Khan El-Abyad Plot A. Experimental Plantation.	Jerusalem Sub-District at kilo 9 on the Jerusalem-Jericho main road.	1922/23	2	2	—	1	Acacia saligna Acacia siberiana Acacia mellifera	218 2 5	225

Serial No.	Name of Plantation	Situation	Year Planting Commenced	Total Area in Dunams	Planted up to 1933/34	Newly Planted in 1934/35	Replanted in 1934/35	No. of Trees planted 1934/35 by Species		
30	Khan El-Abyad Plot B. Experimental Plantation.	Jerusalem Sub-District at kilo 9 on the Jerusalem-Jericho main road.	1932/33	5	5	—	2½	Pinus halepensis	1,000	
								Eucalyptus salmonopholia	50	
								Eucalyptus albens	25	
								Eucalyptus terebicornis	5	
								Eucalyptus crebra	10	
								Eucalyptus cornuta	10	
								Eucalyptus leptophloeba	25	1,125
31	Beersheba-Asluj road.	Beersheba Sub-District 15 kilos south of Beersheba town adjoining the Beersheba-Asluj road.	1934/35	888	—	23	—	Cupressus horizontalis	150	
								Cupressus arizonica	200	
								Tetraclinis articulata	10	
								Casuarina equisetifolia	50	
								Delbergia sissoo	10	
								Retama roetam	50	
								Eucalyptus Crebra	10	
								Eucalyptus gomphocephala	10	
								Eucalyptus salmonophloia	150	
								Eucalyptus cornuta	10	
								Eucalyptus tereticornis	10	
								Eucalyptus rostrata	10	
								Acacia saligna	50	
								Acacia lophantha	50	
								Acacia siberiana	2	
								Acacia mellifera	40	
								Acacia longifolia	5	
								Spartium junceum	50	
								Schinus molle	50	
								Sterculia platanifolia	5	
								Argenia sideroxylon	14	936
								Seed of Acacia cyanophylla and 6 species of Atriplex was also sown.		
		GRAND TOTAL :—		51,892	13,279	2,910	339½			

SCHEDULE OF ROAD-SIDE PLANTING PLOTS 1934/35.

Plot No.	Name of Plantation	Situation	Area in Dunams	Owner's Name	Protection	Trees Planted			
1	Malufia	Ramallah sub-district west of the Jerusalem-Ramallah road at kilostone 13.	2.000	Dahdul Hamdan of Bira village, Ramallah sub-district.	Iron fenced on 2 sides; the other 2 sides are surrounded by a drystone wall.	Pinus halepensis Cercis siliquastrum Cupressus	400 8 65	Mulberries Celtis Canary Pine	6 2 13
2	Bir El-Ras	Ramallah sub-district east of the Jerusalem-Nablus road near kilostone 18.	25.000	Dahdul Hamdan of Bira village, Ramallah sub-district.	Enclosed by a drystone wall.	Pinus halepensis Pinus canariensis Cupressus Carobs Mulberries	3,050 87 135 25 30	Walnuts Celtis Cercis Olives	25 8 12 30
3	Bira	Ramallah sub-district east of Ramallah-Nablus road about 200 metres north of kilostone 18.	7.400	Mussa Sliman of Bira village, Ramallah sub-district.	Enclosed by an angle iron and barbed wire fence on all sides.	Pomegranates Pears Plums Walnuts	10 25 25 10	Apples Pines Carobs Cupressus	25 800 100 200
4	Qubab	Ramle sub-district on the west of Jerusalem-Jaffa road near kilostone 33.	4.500	Ibrahim Hassan Ali of Qubab village Ramle sub-district.	Enclosed by an angle iron and barbed wire fence on all sides.	Alomnds Apricots Pomegranates Cypresses Mulberries	50 25 10 150 50	Walnuts Carobs Peaches Pines	10 50 25 100
5	Huwwara	Nablus sub-district east of the Jerusalem-Nablus road near kilostone 56.	3.378	Jamil Hader Amran of Huwwara village, Nablus sub-district.	Enclosed by an angle iron and barbed wire fence on all sides.	Apples Pomegranates Plums Walnuts Mulberries	25 10 10 10 50	Pears Pines Carobs Peaches Cypresses	10 150 75 10 150

Plot No.	Name of Plantation	Situation	Area in Dunams	Owner's Name	Protection	Trees Planted
6	Deir esh-Sharaf	Nablus sub-district opposite the junction of the Nablus-Jenin Tulkarm roads at kilostone 74.	5.071	Kassem Abu Kassem of Deir esh-Sharaf village Nablus sub-district.	Enclosed by an angle iron and barbed wire fence on all sides.	Apples 25; Pears 10; Plums 10; Walnuts 10; Cypresses 350; Pines 300; Carobs 100; Mulberries 60; Peaches 10; Pomegranates 10
7	Arrabe	Jenin sub-district west of the Nablus-Jenin road near kilostone 99.	7.500	Nasmi and Sabri Abdul-Hadi.	Enclosed by an angle iron and barbed wire fence on all sides.	Pines 150; Fruit trees 95; Cupressus 200; Corabs 100; Mulberries 150
8	Tiberias — Samakh road	Tiberias sub-district on the Tiberias-Samakh road between Degania Settlement and Samakh village.	14.000	State Domain — Antiquity Site.	Enclosed by an angle iron and barbed wire fence on all sides.	Acacia cyanophylla 2,000; Ficus sycomorus 160; Washingtonia felifera 76; Poinciana regia 26; Erythrina crista-galli 4; Phœnix canariensis 25; Tecoma stans 140; Populus nigra 60; Parkinsonia aculeata. 700; Spartium Junceum. 40. Planted in co-operation with the Tiberias Branch of the "Men of the Trees."
9	Jisr Banat Yaqub	Safad sub-district on the Rosh-Pinna-Damascus road near Jisr Banat Yaqub.	4.000	Palestine Jewish Colonisation Association.	Not fenced. Guarded by a Ghaffir.	Eucalyptus 2,000. Planted as a belt round a bend of the main road at the frontier.
10	Haifa-Acre Road	Acre sub-district on both sides of the Haifa-Acre road between kilos 15-16.	6.000	Haifa-Acre Road.	Enclosed by an angle iron and barbed wire fence on all sides.	Acacia cyanophylla 3,450; Cupressus pyramidalis 225; Cupressus horizontalis 225; Cupressus macrocarpa 155; Bauhinia purpurea 225; Brachychiton 325; Mulberries 100; Casuarina 225; Eucalyptus rostrata 7. Planted by the Department in the form of a belt along road reservation width.
		TOTAL	78.849			

STOCK AT GOVERNMENT FOREST NURSERIES ON 1st OCTOBER, 1934.

Name of Nursery	Description	Situation	No. of Plants from previous Year	No. of Plants raised in 1934	Total No. of Plants on 1st October, 1934
Tiberias	Permanent Nursery	Tiberias Town	5,493	140,568	146,061
Nazareth	Permanent Nursery	Nazareth Town	—	163,128	163,128
Acre Stock Farm	Permanent Nursery	Acre Stock Farm and Agricultural Experimental Station.	—	32,397	32,397
Jerusalem	Temporary Nursery	Jerusalem City	12,036	46,793	58,829
Qaqun	Temporary Nursery	Qaqun Forest Reserve, Tulkarm sub-district.	—	6,530	6,530
Gaza	Sand Dunes Nursery	Gaza Sand Dunes Forest Reserve.	33,790	259,540	293,330
Jabalya	Sand Dunes Nursery	Jabalya Forest Reserve	—	150,874	150,874
Acre	Sand Dunes Nursery	Acre Sand Dunes Forest Reserve	10,332	12,945	23,277
Bab El-Wad	Hill Nursery	Bab El-Wad Ramle sub-district	5,431	151,546	156,977
Wad El-Kuff	Hill Nursery	Wad El-Kuff Nursery Hebron sub-district.	26,461	212,563	239,024
Um Safa	Hill Nursery	Um Safa Forest Reserve Ramallah sub-district.	—	19,007	19,007
Khirbet Rabiah	Hill Nursery	Khirbet Rabiah Forest Reserve Ramle sub-district.	16,759	163,903	180,662
Nablus	For propagation of Mulberries	Nablus Town	4,504	37,096	41,600
Maddad	For propagation of Mulberries	Maddad Tiberias sub-district.	—	9,300	9,300
		TOTAL	114,806	1,406,190	1,520,996

APPENDIX No. 11

PRIVATE FOREST PLANTATIONS FORMED DURING 1934/35.

Sub-District	Number of Plantations	Area in Dunams
Jerusalem	1	6
Jaffa	4	27
Gaza	18	23
Haifa	11	578
Acre	14	35
Nazareth	17	407
Safad	9	97
Nablus	3	13
Jenin	3	4
Zikhron Ya'aqov	9	414
Tulkarm	9	359
Tiberias	2	255
Beisan	—	—
TOTAL	100	2,218

APPENDIX No. 12

SCHEDULE OF PRIVATE FOREST PLANTATIONS AS AT 31st MARCH, 1935.

Sub-District	Number of Plantations	Area in Dunams
Jerusalem	14	549
Jaffa	305	10,450
Gaza	41	681
Haifa	58	2,957
Acre	42	253
Nazareth	120	5,305
Safad	89	1,000
Nablus	4	16
Jenin	10	237
Zikhron Ya'aqov	122	6,967
Tulkarm	49	1,453
Tiberias	38	1,185
Beisan	41	1,135
TOTAL	933	38,182

PLANTS ISSUED AND SOLD FROM GOVERNMENT FOREST NURSERIES — 1934/35.

NURSERY	GRATIS ISSUES									Issues to Departmental Plantations	Sales from Government Nurseries	GRAND TOTAL
	Govt. owned lands, properties, gardens, etc. (Excluding Departmental Plantations)	Government and non-Government Schools	Villages and settlements for road and avenue planting	Municipalities for road and avenue planting	Individual land owners, for roadside planting	Orphanages and Institutions	Permanent Military Cantonments	Miscellaneous	TOTAL			
Tiberias	3,505	3,563	30,664	500	—	—	—	—	38,232	107,962	—	146,194
Nazareth	8,291	5,132	3,850	3,110	4,430	2,970	—	1,125	28,908	118,135	2,000	149,034
Acre Sand Dunes & Stock Farm	4,509	1,300	3,260	1,000	—	—	230	—	10,299	14,558	620	25,477
Jerusalem	6,114	11,264	700	545	5,946	983	1,791	172	27,515	19,200	72	46,787
Qaqun	—	—	—	100	—	—	—	—	100	3,150	—	3,250
Gaza & Jabalya	1,154	200	—	—	18,958	—	1,310	—	21,622	419,658	—	441,280
Bab El-Wad	2,300	666	5,650	1,200	17,650	—	—	15	27,481	73,832	—	101,313
Wad El-Kuff	—	100	—	—	50	160	100	—	410	217,520	—	217,930
Um Safa	—	—	—	—	—	—	—	—	—	18,200	—	18,200
Khirbet Rabiah	—	650	1,930	—	9,210	1,000	—	—	12,790	129,416	—	142,206
Nablus	520	1,550	13,300	200	—	—	—	—	15,570	—	—	15,570
Maddad	—	—	—	—	—	—	—	—	—	5,915	—	5,915
TOTAL	26,393	24,425	59,354	6,655	56,244	5,113	3,431	1,312	182,927	1,127,546	2,692	1,313,165

ANALYSIS OF EXPENDITURE AT GOVERNMENT FOREST NURSERIES 1934/35

Nursery	Gardeners Charged to Personal Emoluments LP. Mils	Labour LP. Mils	Purchase of Tins and Pots LP. Mils	Transport LP. Mils	Water Supply LP. Mils	Manure and Soil LP. Mils	Repairs of Tools LP. Mils	Cost of Trees or Plants Purchased LP. Mils	Miscellaneous LP. Mils	Grand Total LP. Mils	No. of Plants at Nursery	Rate per 1000 Plants LP. Mils
Bab El-Wad	72.000	51.200	7.825	—	—	1.190	—	—	1.450	133.665	156.977	0.851
Wad El-Kuf	72.000	38.550	9.506	—	—	2.400	—	—	—	122.456	239.024	0.512
Um Safa	—	8.500	0.437	—	—	—	—	—	—	8.937	19.007	0.470
Tiberias	72.000	54.000	43.000	1.720	19.430	—	2.000	—	5.000	197.150	146.061	1.350
Acre Sand Dunes	—	25.050	3.000	0.800	—	0.220	—	—	0.720	29.790	23.276	1.270
Acre Stock Farm	42.000	20.700	1.250	—	—	0.200	—	—	1.580	65.730	32.397	2.028
Nazareth	102.000	107.350	28.500	—	36.840	6.500	—	3.690	19.260	304.140	163.128	1.864
Gaza and Jabalya	72.000	106.020	9.340	5.050	—	9.005	0.640	—	2.000	204.055	444.204	0.457
Khirbet Rabiah	72.000	61.800	19.000	7.800	—	—	3.500	—	—	164.100	180.662	0.902
Jerusalem	216.000	54.120	22.675	0.300	3.730	8.260	4.900	—	2.154	311.259	58.829	5.280
TOTAL	720.000	527.290	144.533	15.670	60.000	27.775	10.040	3.690	32.164	1,541.282	1,463.566	1.053

STATEMENT OF TOTAL FOREST PRODUCTION 1934/35

	Timber Pieces	Firewood Kantars	Charcoal Kantars	Lime Kantars
Extracted from Forest Reserves by Rightholders	11,300	6,617	190	20
Extracted from Forest Reserves for Trade Purposes	5,545	2,187	1,398	1,093
TOTAL	16,845	8,804	1,588	1,113
Extracted from Private Forest Lands	20,375	29,181	12,339	71,986
GRAND TOTAL	37,220	37,985	13,927	73,099

ESTIMATED VALUE OF FOREST PRODUCE EXTRACTED FROM FOREST RESERVES 1934/35

	Timber		Firewood		Charcoal		Lime		Grand Totat of Values £P. Mils
	Pieces	Value £P. Mils	Kantars	Value £P. Mils	Kantars	Value £P. Mils	Kantars	Value £P. Mils	
Extracted by Rightholders	11,300	169.500	6,617	1985.100	190	228.000	20	5.000	2387.600
Extracted by Traders	5,545	83.175	2,187	656.100	1,398	1677.600	1,093	273.250	2690.125
TOTAL	16,845	252.675	8,804	2,641.200	1,588	1905.600	1,113	278.250	5077.725

NOTE: Timber estimated value at 15 mils per piece.
Firewood estimated value at 300 mils per kantar (300 kilogrammes).
Charcoal estimated value at 1,200 mils per kantar (300 kilogrammes).
Lime estimated value at 250 mils per kantar (300 kilogrammes).

ANIMALS LICENSED TO GRAZE IN FOREST RESERVES 1934/35

Forest Range	RIGHTHOLDERS' ANIMALS					STRANGERS' ANIMALS				GRAND TOTAL
	Goats	Sheep	Cows	Camels	Total	Goats	Sheep	Camels	Total	
Jerusalem	1,191	30	40	376	1,637	41	—	24	65	1,702
Hebron	10,005	1,949	—	—	11,954	—	—	—	—	11,954
Ramallah	454	—	—	—	454	—	—	—	—	454
Ramle	1,738	50		—	1,788	—	—	—	—	1,788
Haifa	10,186	462	778	8	11,434	227	15	5	247	11,681
Acre	7,248	—	175	20	7,443	500	—	—	500	7,943
Nazareth	1,983	801	—	—	2.784	—	150	—	150	2,934
Safad	1,680	—	—	—	1,680	—		—	—	1,680
Tiberias	2,300	155	30	—	2,485	—	—	—	—	2,485
Nablus	4,828	3,355	—	—	8,183	—	420	—	420	8,603
Tulkarm	—	—	—	—	—	—	4,004	—	4,004	4,004
Jenin	12,310	470	350	—	13,130	—	—	—	—	13,130
	53,923	7,272	1,373	404	62,972	768	4,589	29	5,386	68,358

FOREST LICENCES ISSUED DURING 1934/35

Forest Range	FOREST RESERVES								PRIVATE FOREST LAND						Felling of Protected Trees	Removal of Forest Produce	TOTAL
	Rightholders' Licences		Trade Licences						Trade Licences								
	Timber Firewood Charcoal, Lime, etc.	Grazing	Timber	Firewood	Charcoal	Lime	Olive Suckers & Saplings	Grazing of Strangers' Cattle	Timber	Firewood	Charcoal	Lime	Other Produce	Olive Suckers & Saplings			
Jerusalem	7	34	6	1	—	—	—	9	—	37	6	113	—	—	78	49	340
Hebron	20	152	—	—	—	—	—	—	—	96	44	65	—	—	603	88	1,068
Ramallah	—	7	—	—	—	—	—	—	—	27	5	30	—	—	411	—	480
Jaffa	...	—	—	—	—	—	—	—	15	127	—	—	—	—	751	75	968
Ramle	39	30	—	—	—	—	—	—	—	145	—	106	—	—	168	343	831
Gaza	—	—	—	—	—	—	—	—	—	56	25	—	—	—	48	25	154
Haifa	259	129	48	95	—	11	9	6	209	467	488	245	2	—	934	707	3,600
Acre	639	50	14	—	249	—	10	2	19	24	1,348	129	—	5	1,967	543	4,999
Nazareth	33	44	38	77	2	11	1	1	2	83	26	128	—	—	225	64	734
Safad	490	9	10	233	31	—	8	—	—	3	125	32	—	1	425	—	1,367
Tiberias	—	22	—	1	—	—	—	—	—	52	77	36	—	—	108	6	302
Nablus	335	165	1	3	—	—	2	4	—	41	30	107	—	—	36	84	808
Tulkarm	—	—	—	—	—	10	—	1	—	9	13	51	—	—	7	12	103
Jenin	118	207	—	11	22	1	4	—	1	69	748	127	—	—	219	745	2,272
Beisan	9	—	1	12	—	—	—	—	—	2	43	—	—	—	12	33	112
TOTAL	1,949	840	118	433	304	33	33	23	246	1,238	2,978	1,169	2	6	5,992	2,774	18,138

FOREST REVENUE BY CATEGORIES OF PRODUCE 1934/35

MONTH	FOREST RESERVES									PRIVATE FOREST LAND							Sale of Nursery Produce	Sale of Confiscated Produce	Grand Total
	Trade Licences						Dept. Sale of Forest Produce	Rightholders' Licences		Trade Licences									
	Timber	Fire-wood	Char-coal	Lime	Olive Suckers and Saplings	Grazing		Timber, Firewood, Charcoal, Lime, etc.	Grazing	Timber	Fire-wood	Char-coal	Lime	Other Produce	Olive Suckers and Saplings	Felling of Protected Trees			
	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	
April 1934	1.500	9.550	24.125	4.890	—	1.700	3.510	4.600	2.250	0.270	36.810	135.035	98.800	—	—	3.080	—	1.505	327.625
May "	0.950	5.725	17.438	1.500	—	2.000	4.620	2.700	8.200	5.920	65.205	70.150	86.840	—	—	3.340	—	11.418	286.006
June "	0.900	7.600	7.375	3.000	—	—	—	4.150	2.350	5.555	98.840	34.300	69.610	—	—	2.370	—	0·575	236.625
July "	3.000	10.355	21.375	11.550	—	—	3.800	14.350	4.550	7.520	45.295	98.600	93.720	—	—	4.540	—	10.980	329.635
August "	2.500	15.400	19.750	8.550	—	—	—	3.750	0.200	7.038	65.020	156.550	128.310	—	—	7.660	—	5.500	415.228
September "	1.500	17.050	13.500	7.050	—	—	—	12.100	0.450	9.590	52.310	287.400	146.820	—	—	7.090	—	3.980	558.840
October "	22.900	8.225	16.375	7.200	—	0.050	—	16.150	0.550	4.459	133.005	302.670	186.440	—	—	8.580	—	22.750	729.354
November "	5.750	8.975	14.000	1.200	—	0.620	—	6.650	0.200	2.920	98.480	307.500	92·350	—	—	4.710	—	21.760	565.215
December "	1.500	9.200	19.151	—	0.210	0.350	—	3.850	0.350	6.485	85.510	130.295	44.550	0 925	0.135	2.870	1.100	9.650	316.131
January 1935	2.800	7.825	11.876	1.500	5.365	2.035	—	2.470	2.700	0.660	77.845	135.350	30.810	—	0.195	2.370	—	3.710	287.511
February "	1.000	2.800	6.200	—	1.050	0.750	—	10.450	3 600	2.100	53.910	102.350	34.820	—	0.235	1.900	—	4.864	225.849
March "	1.700	6.700	25.250	2.700	0.780	2.840	—	8.850	15.900	3.410	43.540	138.350	89.050	—	—	4.580	2.000	6.374	352.024
Total	46.000	109.405	196.415	49.140	7.405	10.165	11.930	90.170	41.300	55.927	855.770	1898.550	1097.120	0.925	0.565	53.090	3.100	103.066	4630.043

SUMMARY

Year	Forest Reserves				Private Forest Land	Sale of Nursery Produce	Sale of Confiscated Produce	Grand Total
	Trade Licences	Dept. Sale of Forest Produce	Rightholders Licences	Total	Trade Licences			
	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils	LP. Mils
1934/35	418.530	11.930	131.470	561.930	3,961.947	3.100	103.066	4,630.043

APPENDIX No. 19.

OLIVE PROPAGATION 1934/35

Sub-District	Olive Suckers Extracted from Forest Reserves under Licences	Olive Suckers Extracted from Private Groves	TOTAL
Jerusalem	—	3,450	3,450
Bethlehem	—	750	750
Ramallah	—	15,080	15,080
Hebron	—	680	680
Ramle	—	2,865	2,865
Haifa	1,193	1,706	2,889
Zikhron-Ya'aqov	—	6,200	6,200
Acre	680	4,155	4,835
Nazareth	10,740	4,500	15,240
Safad	510	—	510
Jenin	3,550	35,533	39,083
Tiberias	—	1,660	1,660
Beisan	—	1,200	1,200
Nablus	450	40,739	41,189
Tulkarm	625	25,995	26,620
TOTAL	17,748	144,513	162,261

Note: a) In addition to the above the following wild olive suckers were extracted departmentally from Forest Reserves and issued to the under-mentioned Government Horticultural Stations for subsequent budding :—

Government Horticultural Station	Number.
Acre	15,000
Nablus	5,000
Majdal	5,000
Total :	25,000

b) 1,000 wild olive suckers were extracted departmentally from Forest Reserves and sold to a private nursery.

BALANCE OF TRADE IN FOREST PRODUCTS 1934/35

Kind of Products	Exports LP.	Import LP.	Excess of Exports over Imports LP.	Excess of Imports over Exports LP.	Net Excess of Imports over Exports LP.
Charcoal and Firewood	348	553	—	205	
Bamboo stakes	—	845	—	845	
Wood for building	—	524,262	—	524,262	
Wood for furniture	—	39,890	—	39,890	
Wood prepared for citrus fruit cases	—	280,935	—	280,935	
Ply wood	—	84,924	—	84,924	
Wooden hoops for cases	—	15,758	—	15,758	
Wooden stakes for barrels	—	—	—	—	
Trunks and branches of trees	—	15,159	—	15,159	
Empty barrels and cases	—	993	—	993	
Furniture	654	73,963	—	73,309	
Wooden nails	—	61	—	61	
Olive wood manufactures	2,187	—	2,187	—	
Other wood manufactures	31	58,594	—	58,563	
Carts and carriages	75	1,215	—	1,140	
Matches	—	638	—	638	
Cork wood	—	157	—	157	
Plants, shrubs and trees	1,888	12,833	—	10,945	
Paper for packing citrus fruits	—	26,641	—	26,641	
Paper other sorts	—	89,464	—	89,464	
Cardboard	—	23,126	—	23,126	
Empty boxes of paper and carton	36	1,240	—	1,204	
Paper and cardboards, all other manufactures	3,922	52,676	—	48,754	
Tanning substances	114	8,260	—	8,146	
Tar and pitch	—	1,318	—	1,318	
Basket ware	17	3,133	—	3,116	
Gums and Resins	—	3,308	—	3,308	
Essences and essential oils	7,507	7,633	—	126	
Total	16,779	1,327,579			1,310,800
Total 1933	15,185	732,199			717,014
" 1932	9,968	598,753			588,785
" 1931	9,655	426,213			416,558
" 1930	8,989	479,951			470,962
" 1929	11,200	469,936			458,736
" 1928	8,135	436,419			428,284
" 1927	5,816	253,322			247,506
" 1926	5,091	405,920			400,829
" 1925	9,075	441,292			432,217
" 1924	9,420	271,779			262,359
" 1923	7,785	248,036			240,251
" 1922	5,825	148,250			142,425

FOREST OFFENCES 1934/35

Month	Cases Taken to Court				Cases Compounded		Total No. of Cases
	No. of Persons Prosecuted	No. of Persons Convicted	No. of Persons Acquitted	Amount of Fines Imposed by Court LP. Mils	No. of Case	Amount of Compensation LP. Mils	
April, 1934	297	282	15	100.550	—	—	297
May, "	315	287	28	91.350	—	—	315
June, "	90	83	7	46.170	1	1.000	91
July, "	67	63	4	25.600	—	—	67
August, "	100	75	25	93.200	—	—	100
September, "	86	76	10	22.200	—	—	86
October, "	199	182	17	100.750	—	—	199
November, "	250	225	25	90.960	—	—	250
December, "	205	166	39	94.400	—	—	205
January, 1935	163	136	27	148.260	—	—	163
February, "	247	202	45	101.400	—	—	247
March, "	183	176	7	123.350	—	—	183
TOTAL	2,202	1,953	249	1,038.190	1	1.000	2.203

SUMMARY — ANALYSIS OF CASES

1.	Damage to Forests by Fire	2
2.	Unauthorised Possession of Forest Produce	227
3.	Unauthorised Felling	1,426
4.	Unauthorised Removal of Forest Produce	147
5.	Unauthorised Grazing	110
6.	Land Encroachments	121
7.	Miscellaneous	170
		2,203

FOREST FIRES 1934/35

Forest Range	Date	Locality	Cause	Damage
Haifa	15-11-34	Ain Hod Proposed Forest Reserve	Started at the neighbouring cultivated lands of private persons	An area of 20 dunams was burnt — containing Ballan, Sarris, and Pine trees
Nazareth	1-11-34	Balfour Forest of the Jewish National Fund	Unknown	An area of a few square metres was burnt of weeds and thorns — no damage was caused to trees

STATEMENT OF EXPENDITURE — 1934/35

Sub-Head	Estimates £P. Mils	Actual Expenditure £P. Mils	Balance £P. Mils	Cost of Living Allowance £P. Mils	Housing Allowance £P. Mils	Total Expenditure £P. Mils	Remarks
I. PERSONAL EMOLUMENTS							
Senior Technical Service	1,627.000	1,627.000	—	60.000	—	1,687.000	
Forest Surveyors	370.000	370.000	—	18.000	—	388.000	
Forest Rangers	1,954.000	1,954.000	—	83.000	12.000	2,049.000	
Clerical Officers	748.000	748.000	—	31.000	28.000	807.000	
Head Gardener Government House Grounds	196.000	196.000	—	9.000	—	205.000	
Botanical and Silvicultural Assistant	144.000	144.000	—	6.000	—	150.000	
Forest Guards	2,664.000	2,623.000	41.000	—	—	2,623.000	
Forest Gardeners (including 3 Gardeners at Government House Grounds)	936.000	936.000	—	—	—	936.000	
Messengers, Cleaners and Caretaker	181.000	181.000	—	—	—	181.000	
TOTAL	8,820.000	8,779.000	41.000	207.000	40.000	9,026.000	
II. OTHER CHARGES							
Afforestation	4,000.000	3,978.685	21.315				
Upkeep of Nurseries	950.000	949.495	0.505				
Rent of Nurseries	10.000	10.000	—				
Demarcation of Forests	300.000	245.692	54.308				
Silvicultural Research	100.000	96.752	3.248				
Transport and Travelling	2,703.000	2,643.380	59.620				£P. 2,403 in Estimates plus £P. 300 Special Warrant.
Forage	50.000	44.796	5.204				
Upkeep of Government House Grounds	500.000	482.251	17.749				
Departmental Extraction of Forest Produce	100.000	20.130	79.870				Saving of £P. 40 to offest Special Warrant No. 193 for Item 58— Forest Rangers.
Contingencies	21.000	8.890	12.110				
Uniforms	275.000	255.531	19.469				
Lighting and Heating	10.000	8.595	1.405				
Grafting of Wild Carob Trees in Forest Reserves	100.000	98.427	1.573				
Distribution of Olive Suckers	100.000	96.000	4.000				
Road Side Tree Planting	300.000	282.795	17.205				
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9,221.419	

Appendix No. 24.

LIST OF EXOTICS INTRODUCED 1934/35.

A. — By Exchange.

Species.	Country of Origin.
Bauhinia variegata	Hong-Kong.
Rhus aromatica	U.S.S.R.
Lagerstroemia indica	"
Prunus lusitanica	"
Helianthemum chamaecistus	"
Catalpa bignonioides	"
Pyretrum cinerarifolium	"
Photinia serrulata	"
Catalpa kaempferi	"
Abutilon avicennae	"
Abutilon tiliaefolium	"
Artemisia salsoloides	"
Clematis orientalis	"
Phoenix canariensis	U.S.A.
Eugenia jambos	"
Eugenia cornuta	"
Swietenia mahogani	"
Cassia fistula	"
Grevia populifolia	"
Pinus nigra var. caramanica	Cyprus.
Eucalyptus melliodora	Italy.
Osteomeles anthyllidifolia	"
Eucalyptus tereticornis	"
Escallonia floribunda	"
Albizzia julibrissin	"
Cupressus guadalupensis	"
Bergenia crassifolia	"
Chrystanthemum mawei	"
Berberis sinensis	"
Casuarina stricta	"
Agave ghiesbrechtii	"
Yucca aloifolia	"
Brachychiton diversifolium	"
Eucalyptus globulus	"
Eucalyptus ampliflora	"
Metrosideros tomentosa	"
Phylica paniculata	"
Melaleuca linariifolia	"
Pittosporum tobira	"
Wigandia caracasana	"
Ephedra altissima	"
Acacia neriifolia	"
Crataegus azarolus	"
Tipuana speciosa	"
Odontosperumum maritimum	"
Dimorphotheca ecklonis	"
Cercic siliquastrum	"
Pittosporum colensoi	"
Sophora tetraptera	"
Acacia melanoxylon	"
Elaedendron capense	"
Callistemon rigidus	"
Prosopis glandulosa	"

Species	Country of Origin.
Cotoneaster salicifolia	Italy.
Buddleia madagascariensis	"
Melaleuca nesophila	"
Eucalyptus leucoxylon	"
Brachychiton luridus	"
Coronilla glauca	"
Lavatera maritima	"
Acacia cyanophylla	"
Eucalyptus marginata	"
Berberis asiatica	"
Berberis chitria	"
Jacaranda ovalifolia	"
Cedrus haukeanus	"
Brachychiton acerifolium	"
Aloe speciosa	"
Sempervivum canariense	"
Anisacanthus warichtii	"
Iochroma coccinea	"
Melaleuca ericifolia	"
Melia azedarach	"
Acacia horrida	"
Casuarina cunninghamiana	"
Citrus hystrix	"
Eucalyptus rostrata	"
Melaleuca acuminata	"
Melaleuca preissiana	"
Acer oblongum	"
Callistemon salignus	"
Eucalyptus preissiana	"
Aloe salmoickiana	"
Cotoneaster horizontalis	"
Cupressus arizonica	"
Eucalyptus polyanthemos	"
Genista ferox	"
Paulownia tomentosa	"
Tithonia speciosa	"
Leptospermum laevigatum	"
Acacia marcadenia	"
Eucalyptus pilularis	"
Casuarina equisetifolia	"
Hakea laurina	"
Brachychiton populneum	"
Acacia pycnantha	"
Nandina domestica	"
Arctotis revoluta	"
Sempervivum canariense	"
Aechmea disticantha	"
Chimonanthus praecox	"
Grevillea robusta	"
Cassia froribunda	"
Eucalyptus cornuta	"
Eucalyptus crebra	"
Melaleuca cuticularis	"
Cassia corymbosa	"
Eucalyptus diversicolor	"
Melaleuca diosmifolia	"
Acacia verticillata	"
Agava ferox	

Species	Country of Origin.
Casuarina torulosa	Italy.
Phygelius capensis	"
Ginkgo biloba	"
Eucalyptus maidenii	"
Coronilla valentina	"
Leptosyne gigantea	"
Melia Candollei	U.S.A.
Terminalia saffordii	"
Ceiba pentandra	"
Bignonia unguis-Cati	"
Viburnum acerifolium	"
Bauhinia variegata	Queensland.
Eucalyptus leptoloeba	"
Melaleuca spp. (white Ti)	"
Eucalyptus corymbosa	"
Liriodendron tulipifera	"
Ailanthus altissima	U.S.A.
Catalpa bignonioides	"
Lantana camara	"
Styrax japonica	"
Psidium araca	"
Hibiscus vitifolius	"
Convallaria majalis	"
Pyracantha angustifolia	"
Ficus benjamina comosa	"
Bauhinia candicans	"
Bombax malabrica	"
Prosopis chilensis	"
Pinus tabulaeformis	"
Ficus religiosa	"
Albizzia chinensis	"
Catalpa hybrida japonica	"
Genista rhodorhizoides	"
Rhamnus davurica nipponica	"
Hibiscus vitabilis	"
Cercis canadensis	"
Crataegus plenospyrum	"
Cercis chinensis	"
Paulownia tomentosa	"
Liquidambar stryraciflua	"
Lagerstroemia speciosa	"
Genista sphaerocarpa	"
Ficus hirta	"
Metrosideros tementosa	New Zealand.
Caragana maximowiana	U.S.A.
Caragana aurantiaca	"
Caragana boissii	"
Maackia amurensis	"
Cladrastis lutea	"
Maackia faurei	"
Pterocarpus stevensoni	North Rhodesia
Acacia giraffae	" "
Sophora tetraptera	New Zealand.
Pinus rigida	U.S.A.
Pinus caribaea	"
Pinus palustris	"
Forsythia suspensa	England.

Species	Country of Origin.
Salvia coccinea	England
Spathodea nilotica	Uganda.
Combretum comosum	"
Chlorophora excelsa	"
Anacardium occidentale	North Rhodesia.
Baikiaea plurijuga	" "
Sterospermum kunthianum	Hong Kong.
Callistemon lanceolata	U.S.A.
Sabal palmetto	"
Zizyphus mauritiana	U.S.S.R.
Abutilon avicennae	"
Dimorphotheca pluvialis	"
Escholzia californica	"
Ulmus loevis	"
Portulacca grandiflora	"
Crataegus sanguinea	"
Valeriana nitida	"
Malva sylvestris	"
Crataegus sp. (Du Zhiguli)	"
Atriplex hastata	"
Atriplex nitens	"
Atriplex tataricum	"
Acacia spirocarpa	Egypt.
Bauhinia hookerii	"
Cassia australis	"
Cassia bicapsularis	"
Eugenia jambolana	"
Schinus dependens	"
Ilex paraguensis	Tanganyika.
Leucospermum argenteum	South Africa.

B. — By Purchase.

Eucalyptus corynocalyx		France.
Eucalyptus melliodora		"
Eucalyptus tereticornis		"
Eucalyptus regnans		"
Eucalyptus obliqua (gigantea)		"
Eucalyptus marginata		Australia.
Eucalyptus gomphocephala		"
Eucalyptus diversicolor		"
Eucalyptus salmonophloia		"
Eucalyptus salubris		"
Pinus canariensis		Austria.
Cupessus arizonica		"
Cupressus macrocarpa		"
Robinia viscosa		"
Cedrus libani		"
Cedrus atlantica		"
Pinus insignis		"
Cedrus deodora		"
Populus deltoidea	(plants)	France.
Populus angulata cordata	"	"
Populus generosa henryi	"	"
Populus raverdeau	"	"
Populus regenerata	"	"
Populus robusta	"	"
Pinus pinea		Lebanon.

APPENDIX No. 25.

LIST OF SDEES ISSUED FROM EXCHANGE BUREAU 1934/35

Local Correspondent	No. of Species	Foreign Correspondents	No. of Species
Mr. Taylor, District Engineer, Palestine Railways, Lydda.	18	Superintendent, Government Lawrence Gardens, Lahore, India.	30
Principal, Agricultural Kadoorie School, Tulkarm	5	Director, Botanical and Forestry Department, Hong-Kong.	2
Assistant Superintendent of School Gardens, Haifa	4	Director, National Museum, San Jose, Costa Rica.	4
		Director in Chief of the Department of Agriculture and Industries of Persia.	3
		Burean of Plant Industry Department of Agriculture, U.S.A.	1
		Conservator of Forests, Entebbe, Uganda.	1
		Botanical Gardens, Samara, U.S.S.R.	16
	27		57

APPENDIX No. 26.

LIST OF PLANT MATERIAL COLLECTED AND PURCHASED LOCALLY. 1934/35

A. — COLLECTED LOCALLY AND CONCENTRATED AT HEADQUARTERS.

Species	Quantity Grams	Species	Quantity Grams
Bauhinia purpurea	1.000	Ceratonia siliqua	71.000
Jacaranda mimosaefolia	20	Acacia cyanophylla	31.000
Parkinsonia aculeata	5.200	Brachychiton spp.	7.000
Pistacia mutica	250	Cassia marilandica	5
Celtis australis	5.000	Laurus nobilis	2.500
Cupressus horinzontalis	10.000	Melia azedarach	7.000
Cupressus pyramidalis	900	Rhus coriaria	50
Hibiscus vitifolius	5	Acacia pycnantha	2.000
Robinia pseudo-acacia	1.250		
Olea europea	3.150		
Quercus coccifera	600	Pistacia palaestina	10.000
Phillyrea media	500	Contoneaster pannosa	200
Quercus aegilops var. ithaburensis	10.000		
Dalbergia sissoo	15.000		
		TOTAL 183 KILOGRAMS 630 GRAMS	

B. — PURCHASED LOCALLY

Vinus halepensis	47.000

REPORT ON THE AGRICULTURAL SERVICE FOR THE YEAR ENDING MARCH, 1935.

CONTENTS:

I. Citrus Fruit Inspection and Export.

II. Research and Investigations.

III. Horticultural Demonstration Plots.

IV. Citrus Demonstration Station, Sarafand.

V. Acre Horticultural Station.

VI. Jericho Horticultural Station.

VII. Jerusalem Horticultural Station.

VIII. Beisan Horticultural Station.

IX. Farwana Hirticultural Station.

X. Farradiya Horticultural Station.

XI. Nablus Horticultural Station.

XII. Majdal Horticultural Station.

XIII. Statistical Appendices.

REPORT OF THE CHIEF HORTICULTURAL OFFICER

Citrus Fruit Inspection and Export.

The total quantity of citrus fruit exported to various countries, as shewn at Appendix A, during the 1934/1935 season (September 1934 to May 1935 inclusive) was 7,330,846 boxes, made up of 6,507,995 oranges; 791,661 grape-fruit; 30,058 lemons and 1,132 mandarines, tangerines and pomelos.

The comparable figures during 1933/34 season were 5,526,097 boxes, made up of 5,097,352 oranges; 408,184 grape-fruit; 19,798 lemons and 763 other citrus.

The most significant increase in imports occurred through the port of London, being second only to Liverpool. If Southampton, which to all intents and purposes is London, is added, the capital has become the largest importer of Palestine citrus, whereas four or five years ago, London was a comparative small consumer. (Appendix A.)

Exports according to ports are shown below :—

		1933/34	1934/35
Ex Jaffa	—	3,301,351	4,212,649
Ex Haifa	—	2,014,824	2,953,392
Via Kantara	—	209,922	164,805
Total boxes		5,526,097	7,330,846

The increases exported over the previous season were approximately :— Oranges 40%; Grapefruit 100% and Lemons 50%.

Direct shipments from Jaffa and Haifa were as under :—

TO THE UNITED KINGDOM		BOXES:
Conference Lines	Prince Line, Moss Line, Ellerman Line, Westcott & Laurence Line	— 2,139,274
and their Associated Lines	Torm Steamship Co., J. Gorthon Line, Cunard Line	— 1,229,855
Independent Line —	Fred Olsen	— 210,545
Jaffa Orange Line	Maersk Line, Muller Line, Ohlsen Line	— 1,575,764
	Total	— 5,155,438

TO THE CONTINENT :

Deutsche Levant Line	791,832
Svenska Orient Line	484,866
Fred Olsen	134,840
Lauritzen Line	97,574
Jaffa Orange Line	17,271
Total —	1,526,383

The above figures do not include shipments to Constanza, Odessa, Trieste, Genoa, Marseilles, Port Said or any ports east of Suez Canal.

Prices realized in the United Kingdom for oranges and grapefruits were disappointing and, with the exception of the early shipments, ruled at a low level almost throughout the season, the average price per box being for oranges 9/6 and grapefruits 11/6, as compared with 11/- and 14/6 respectively in the previous season. The fall in prices can be attributed to abnormal weather conditions in Palestine during the picking season and particularly between mid-December 1934 and end of February 1935 when rains fell almost persistently and few fine spells intervened, so that the soil, trees and fruit were waterlogged with the consequence that fruit was in extremely weak carrying condition and on out-turn in overseas markets, consignments opened up with a very high percentage of wasty fruit. On account of this heavy wastage, buyers were naturally not prepared to pay prices that might otherwise have obtained. It may be said that it was the incidence of the rain that caused the damage and not the actual quantity of water that fell, as during a normal Palestine winter, frequent bright sunny spells occur so that picking of oranges can be undertaken under satisfactory weather conditions, but such conditions were almost entirely lacking during the winter of 1934/35.

With weather conditions such as were experienced last citrus harvesting season, it could not be expected that oranges would reach overseas markets in the same sound condition as during the last few seasons or realize the prices of normal merchantable fruit. At the beginning of the season a largely increased and intensive campaign, to advertise Palestine (Jaffa) oranges and grapefruit in the United Kingdom, was decided on in view of the anticipated very considerable increase of these fruit into that country. This advertising propaganda was very well and judiciously carried out but it was most unfortunate that the condition of the fruit was not satisfactory, as already explained. In spite of this campaign, it was not possible to raise or even maintain the price level on account of the wasty condition of the fruit; on the other hand, if it had not been for the intensive advertising, particularly towards the end of the season, prices would in all probability have been even lower.

The citrus export shipments commenced at the beginning of October with grapefruit and the first oranges were shipped on the 15th November, when oranges were considerably advanced as regards maturity, in colour and sweetness, in comparison with those on the corresponding date of the past few years.

Inspection of fruit prior to export was carried out at special stores in Jaffa and Haifa, as well as at all railway stations, permanent staffs being maintained throughout the season at Jaffa and Haifa and at Rehovoth, Petah-Tiqva, Tel-Aviv and Hadera railway stations, while all other railway stations were operated from the most convenient of these centres mentioned above.

Citrus sheds at Rehovoth and Petah-Tiqva railway stations were extended and new sheds erected at Tel-Aviv and Hadera stations in order to cope with the increased traffic.

Weather conditions at Jaffa were more than usually difficult, so that on occasions, no loading of steamers in the roadstead was possible for periods of several days, sometimes a week and even longer. These delays occasioned great loss to shippers as fruit, already weakened by bad climatic conditions before packing, commenced to break down before shipment with the consequence that a high percentage of waste was evidenced on out-turn overseas.

A total of 124,385 boxes were rejected, after inspection, either for repacking, or as unfit for export, for various reasons. Red Scale was responsible for the rejection of 24,263 boxes which is apparently a reduction in percentage of this pest over the previous season. This comparatively small percentage of rejections on account of Red Scale was brought about by the employment of a number of itinerant inspectors, who moved around the packing houses in the worst scale infected areas. It was their duty to stop exporters, in so far as possible, from packing scale infested fruit. By this means, very large quantities of scale infested fruit were diverted to local markets and those countries which were exempted from inspection under the Regulations to the Fruit Export Ordinance. Other causes for rejection were soft blemishes, puffy skin (locally called farоosh), mechanical injuries, and irregular sizing, while waste from decay was very frequently the reason from the middle to the end of the season.

During the Summer of 1934, operations to control Red Scale and other Scale Insects by grove owners had been considerably extended, due largely to demonstrations and supervision by Government officers in recent years. In spite of these measures, very large consignments of oranges and grapefruit were heavily infested with Red Scale, the fruit generally coming from groves on which no attempt at any control had been made. It would be a fair statement to say that at least 200,000 boxes of oranges and grapefruit were rendered unfit for export, in addition to those actually rejected at inspection prior to export, on account of the fruit being so heavily infested with Red Scale as to be unsightly and quite unsaleable on any overseas market. Many growers have come to appreciate the fact that control measures, either by fumigation or spraying, must be undertaken to control this pest for the health of their trees as well as to ensure their fruit being passed by Government Fruit Inspectors as fit for export. It is understood a number of fumigating and spraying concerns, to be run on commercial lines, have been inaugurated for the purpose of fumigation or spraying groves at a stated figure per tree and will commence operations during the Summer of 1935. This is the usual procedure in other countries, and it is hoped, will have beneficial effects in Palestine.

The repacking of rejected consignments was proceeded with, as in previous seasons, the operation being undertaken by employees of the Fruit Inspection Service or by employees of the owner of the rejected fruit under the supervision of a Fruit Inspector.

As in past seasons, every precaution was taken to prevent smuggling of fruit unfit for export into the port areas. Such measures are less difficult to carry out at the railway stations where a better opportunity is presented of more complete inspection of consignments when offloaded into the citrus sheds or into the rail wagons under the supervision of Government Fruit Inspectors. Similar arrangements do not hold good at the Jaffa inspection store, where it is not possible to insist on all lorry loads being completely offloaded, on account of lack of time. It is recognized that smuggling of unfit fruit is attempted and that irresponsible exporters attempt to evade the regulations. Many such attempts are detected and when discovered, the consignments are rejected by the Fruit Inspector. This situation will be remedied when the improvements at Jaffa port are finally completed, so that all consignments of fruit intended for export can be completely inspected and stored in accommodation under one roof and under Government control.

The Regulations under the Fruit Export Ordinance had been amended as regards sizes of box permitted for exporting oranges and grapefruit which limited the size between sixty-eight and seventy-four centimetres in length with varying width and height and in practice some four sizes of boxes were used. This was an improvement over the practice of past years when very many more sizes of boxes had been in common use. It has been realized for a number of years that a box of one standard size is essential, so that the packing of the fruit may be standardized in order to gain the confidence of buyers in the knowledge that a certain count indicated on the box is one definite size of fruit. At present, the actual size of fruit contained in a box (although correct according to the count indicated) may vary according to the size of box used. Although these variations are fairly well understood in the wholesale trade in Europe, they are liable to be very misleading to the retailer. The standard commercial orange box, used by many of the large orange producing countries, is not suitable for the Jaffa orange on account of it's definite oval shape. During the past season, three sizes of box, large, medium and small, were evolved, one of which it was proposed should be made the standard for all counts of oranges. Complete sets of all counts of oranges, from the shortest to the longest count permitted for export, were packed in each of the three proposed standard size boxes and exhibited at the Fruit Inspection Store, Jaffa, for inspection and comment by the Citrus Fruit Committee and all interested citrus exporters. A practically unanimous approval was given to the large size box, because this box could accommodate the big fruit of which there is, unfortunately very large quantities particularly from young trees, whereas the medium and small size box could not accommodate the big fruit in suitable counts of fruit.

It was recommended by citrus exporters and the Citrus Fruit Committee that Government should send a shipment of two or three hundred boxes of the large size to some ten Wholesale Fruit Brokers and Salesmen in the United Kingdom requesting them to report on the suitability of the box and counts from a wholesale and retail point of view. The packing and shipping of these consignments was undertaken by the Fruit Inspection Service. Two hundred and fifty boxes were sent to ten consignees. The reports were unanimous in accepting the proposal for a box of one standard size, but were all opposed to the size of the box sent as being unwieldy, too heavy for one person to handle conveniently, too long to stack more than two boxes high, and also because of the extra master-porterage charges due to increased weight and the doubt as to whether buyers in bulk would pay a higher price per box than for the present smaller size of boxes, as they are accustomed to a box being the unit of sale.

It is hoped that trial shipments of the medium, and possibly the small size, box will be undertaken during the next export season as it is confidently anticipated that the medium size box, which is capable of accommodating all merchantable sizes of oranges, would be well received by the Fruit Trade in the United Kingdom and the continent of Europe.

Research and Investigations

(A) KEEPING QUALITIES OF ORANGES :

The experiment was continued, keeping the following factors in view :— The effects of stocks (Sweet Lime and Sour Orange), soils (Kurkar, Light and Heavy Soil) and zones. It appears that oranges grown on a sweet lime stock are more susceptible to decay than those on sour orange stock.

(B) COLD STORAGE EFFECT ON ORANGES :

Results obtained were similar to those recorded in previous years.

(C) COLD STORAGE EFFECT ON CULL ORANGES & GRAPEFRUIT :

Similar results to those recorded before were obtained.

(D) THE EFFECT OF AMMONIUM BICARBONATE ON THE STORAGE OF ORANGES :

The results obtained were published in the "Hadar" of July 1934. The use of Ammonium Bicarbonate was found to lengthen the keeping period of sound, cull, and bruised oranges and those from trees affected with Diplodia fungus and those inoculated with moulds. The effect was greatest when the chemical was more closely applied to the fruit, but the closer the chemical to the fruit, the greater was the percentage of Nuksans.

(E) KEEPING QUALITIES OF CULL ORANGES :

Special attention was paid to the study of the keeping qualities of cull oranges. Experiments were carried out to determine the amount of loss in oranges affected by known blemishes. The following were considered :— Oranges punctured by the Mediterranean Fruit Fly, affected by Oleocellosis, infested by Red Scale, Stemless, Wounded and affected by what is called Waraka.

(F) BEES EFFECT ON ORANGES :

This experiment was continued on a larger scale than in the previous year. The results are definitely in favour of pollination by bees. It was also ascertained after examining 1500 oranges, that Shamouti oranges from trees budded on sour orange stock contain less seeds than those on sweet lime.

(G) SOUR ORANGE STOCKS :

The experiment was continued, keeping the following factors in view : the continued and one additional type was identified and named type "E". Seeds of these various types were sown separately in order to raise them and study the variations in seedlings.

Horticultural Demonstration Plots

VARIETY PLOTS :

Four new variety plots were planted out at Sila (Jenin sub-district) Reina (Nazareth sub-district) Salfit (Nablus sub-district) and Zakariyya (Hebron sub-district).

The objects of these plots are :—

(a) To introduce new kinds and varieties of fruit-trees suitable for the district.

(b) To establish a well-laid out fruit orchard which will serve as a centre for study.

(c) To establish an orchard of good varieties which will serve as a centre for budwood for distribution free of charge to neighbouring villages.

The selected areas are situated in the centre of leading fruit growing zones and should be of great help in improving cultural methods as usually carried out.

All trees planted in these plots were raised in Government nurseries, a careful selection of trees having been made for each zone.

Almonds, apricots, peaches, plums, and a few pears and apples were planted in Zakariyya while more apples, pears and quinces were planted out in the mountain areas of Reina and Salfit.

The trees at Hebron and Qeitiya demonstration plots are develoing well.

REJUVENATION OF OLIVE TREES :

The work at Reina and Burqa was continued and the results have been satisfactory.

A new orchard was selected in Ya'abad in Jenin sub-district where trees were pruned and manured.

TOP-WORKING OF UNPRODUCTIVE OLIVE TREES :

Further work was continued at Khulda. The top-working was carried out by means of cleft, bark and tongue grafts, so as to work over inferior varieties to good ones such as Ascolano, Souri, Sevillano, Damascus, Manzanillo, Merhavia, French, and Mission.

DEMONSTRATION IN THE USE OF OLIVE-COMBS :

Demonstrations in the use of olive-picking combs were carried out in all the main olive growing centres of Palestine. The picking combs gave very good results and created a considerable amount of interest, with the result that large numbers of these combs have been ordered from the manufacturers for use during the coming years' harvest.

SANITATION OF CITRUS GROVES :

This work was continued during 1934 but on a larger scale in groves around Gaza, Hirbya, Yibna, Rishon, Jaffa, Qalqilya and Qaqun in the south and around Zeeb, Nahr and Um el Faraj in Acre sub-district.

Very considerable interest was taken in the operations by growers in the vicinity of these places, who were invited to inspect the work, when the opportunity was taken to explain its value.

CITRUS THRIPS AND RED SPIDER :

About 200 dunams of citrus groves around Hadera were dusted with dry sulphur, while growers used similar control measures over large areas around Hadera, Emek and Tiberias, mainly against Red Spider.

SPRAYING DEMONSTRATIONS TO CONTROL RED, MUSSEL & WAX SCALE :

During the late spring and summer of 1934, work was undertaken to demonstrate a method of controlling these pests in citrus groves, with the consent of the owners, under the supervision of officers of this Service using a Government owned pump. Labour and material (various miscible oils) were provided by the respective grove owners. The demonstrations were carried out at the following places :—

Gaza	5000 trees
Majdal	4000 "
Safiriya, Sarafand, Beit Dajan	3500 "
Latrun	500 "
Rishon	500 "
Jaffa	2500 "
Qalqilya	500 "
Qaqun	500 "
	17,000 trees

In addition about 130,000 trees were sprayed by grove owners themselves under occasional Government supervision.

The realization of the necessity of employing some measures of control against these pests has been largely brought about through many thousands of boxes of citrus fruit being rejected when submitted for inspection prior to export during recent years, as well as through spraying demonstrations carried out by this Service during the last four summers.

Citrus Demonstration Station, Sarafand.

The area was planted out in accordance with the scheme set out in the previous Annual Report.

All the buildings were completed during the year; a well was sunk and irrigation layout installed.

The groves were planted out in March — April 1935, the trees having been raised at Acre Horticultural Station.

The following varieties were planted out in the Citrus Collection:—

Oranges : Viscedas, Valencia late, Navelencia, Magnum Bonum, Hamlin, Lue Gim Gong, Vernia, De Nice, Maltese, Gold Nugget Navel, Ruby Blood, Washington Navel, Parson Brown, Pineapple, Cadenas, Baladi, Australian Navel, Black Orange, Acawi, Bizzeri, Vaniglia, Nagpur, Syrinagar, Sylhat, Sigillata, Sanguigno Doppio, Portogallo, Tarocco.

Mandarines : Temple, Taitense, Satsuma, Clementine, Dancy, Avana, King, Large local, Willow leaved.

Tangelos : Sampson, Thornton, Wekiwa, Nocatee.

Citrons : Etrog, Cedro di Calabria, Large Citron.

Seed Bearers : Sweet Lime, Sour Orange, Rough Lemon.

Grapefruits : Foster, McCarty, Pernambuco, Duncan, Pomelo large, Pomelo small, Pamplemousse, Large white, Large pink, Large red, Stalkart, Isabella, Thompson, Merythr, Weeney.

Lemons : Lunaria, Ponderosa, Commun, Lumiciana, Meyer, Testa di Turco, Peretinon, Lemon Hindi, Del Brasil, Commun di Sicilia, Bergamote.

Limes : Thornless, Chinotto Myrtifolia, Limequat, Egyptian small, Della China, Limonella Romana, Kagzi, Patty, Rangpur, Sharbutty, Bizzaria, Calamondin, Persian, Tahitian, Sweet, Bears Seedless.

Kumquats : Nagami, Marumi, Meiwa.

Sour Oranges : Seville Flat, Poormans.

All these trees were either raised in the Acre Nursery or received from Spanish, Italian, Algerian, American and Indian Nurseries.

A small deciduous fruit nursery was established last season and about 775 budded trees were raised and distributed.

A small nursery of Citrus, Persimmons. Loquats, Avocados, and Annonas has been established during the year with a view to demonstrating how to raise trees.

Further seed-beds were put down in March, the young seedlings will be transplanted in Summer.

Cape-Gooseberries : Cape gooseberry seeds were received from South Africa and sown. The fruit is finding favour for jam making and plants and seeds are being distributed to many applicants.

Acre Horticultural Station.

The area of this Station was enlarged by about 40 dunams mainly for use as a nursery to raise fruit trees and vines for distribution to farmers.

The Station is at present divided as follows :—

A. *Plantations* :

Citrus Orchard	21 dunams
Deciduous fruit Orchard	23 "
Vineyard	25 "
	69 dunams

B. *Nurseries* :

Vines	15 dunams
Deciduous stocks	30 "
Olive suckers	11 "
Deciduous-stock (layering, cuttings.)	4 "
Citrus Seedlings	5 "
	65 dunams

Together with 16 dunams in reserve, and roads and buildings, the total area is 150 dunams.

About 113,000 deciduous fruit stocks are being raised in the nursery and about 169,000 grafted vines. In the deciduous fruit orchard and in the vineyard, the few blanks were replaced.

The citrus grove was planted out in March, 1935, and is divided into three blocks, one being planted to grapefruit (6 m by 6 m) one to oranges (6 m by 4 m), and one to a citrus collection (6 m by 4 m.)

The grapefruit block consists of Marsh Seedless budded on sour orange stock, one half on 19 months old stock and the other on 9 months old stock; there are also in this block 9 trees Marsh Seedless on sweet lime and 9 trees on rough lemon.

Most of the orange block consists of Shamouti budded on one year old sour orange stocks, excepting 14 Shamouti on rough lemon and 14 on sweet lime.

All budwood, orange and grapefruit, was taken from trees of known record and performance, while seedling stocks were raised from seeds collected from known trees.

The citrus collection block consists of various trees raised in Acre Nursery as well as some imported from Italy, India, Spain and California.

The varieties planted out are :—

Oranges :

Valencia Late, Washington Navel, Hamlin, Parson Brown Ruby Blood, Acawi, Lue-Gim-Gong, Sanguino doppio, Nagpur, Syrinagar, Sylhat, Sigillata.

Mandarines :

Satsuma, Clementine, King, Large local.

Grapefruit :

Foster, McCarty, Thompson, Duncan, Pernambuco.

Pomelos :

Nanas and Goliath.

Lemons :

Villafranca, Baladi, Eureka, Lisbon, Luminiciana, Commun, Lunaria, Ponderosa.

Citrus :

Large and Cedro di Calabria, Meyer.

Kumquats :

Nagami and Meiwa.

Tangelos :

Wekiwa.

VINEYARDS :

The following new varieties of table-grapes were planted out:— Khalili, Mrs. John Martinez, Joannenc Charnu, Chasselas Rose de Falloux, Bican, Chasselas Coullard, Chasselas de Montauban, Madeleine selected.

The following new American stocks were planted out :— Berlandieri x Riparia 8B Teleki, Berliandieri x Riparia 5BB Teleki, "150 — 15", "1616", "216 — 3" and Cabernet x Berliandieri 333.

A number of experiments in sowing fruit-seeds were tried with a view to raising the fruit stocks locally, among which were Malus communis, Pyrus communis, Cydonia vulgaris, local seeds of Karrasia (Prunus carassia), Sweda (Prunus domestica) and Myrobolan. The seeds were treated before sowing in :—

(a) Cold Storage (4^0c) for various periods.

(b) Stratified in sand.

(c) Dipped in cold or hot water from 10 — 48 hours.

It is rather early to comment on the results but it may be stated that seeds kept in cold storage showed the highest percentage of germination.

It seems certain that such seedlings should not be transplanted in spring, as the mortality is very high and it is best to allow them to grow in seed beds until winter and transplant them when dormant to nursery rows.

A plot has been set aside for the propagation of Doucin, Quince and local Khashabi apple by layering, good healthy plants being used and set out in rows 2.40 m by 0.50 m.

A further trial of propagating Doucin, Khashabi and Quince by means of cuttings is being made, about 4000 cuttings being used. These cuttings, 30 cm in length, were kept in sand under glass of 20 days until they formed callus and were then planted out in nursery rows (0.60 m by 0.10 m). The "take" seemed to be good, but a considerable amount of damage by scorching was caused by the hot easterly winds during March and April.

The following trees were sold or issued free of charge during the year :—

	Sales	Free Issues :
Grafted Vines	14,680	51,542
Citrus Seedlings	10,738	25,147
Budded Citrus	—	325
Budded deciduous fruit trees	3,196	5,241.

Jericho Horticultural Station.

The weather during the year was warm with very hot dry days. The wet season was better than normal, with 29 rainy days at scattered intervals giving a total of 154 mm., the highest known for many years.

A very severe storm occurred on the 4th of February 1935 which caused considerable damage to Papaws and some Bananas.

The area recently prepared which adjoins the station was planted out to :—

(a) Vines — Joannenc Charnu, Chasselas Doré, Muscat of Alexandria and Sultanina.

(b) Bananas — Cavendish.

(c) Dates — Hyanni, Daglat Nur, Ashiazi, Bahri, Bonfashi, Emir Hag, Hallawi, Mizawi, Khadrawi, Kustawi, Maktoum, Taberzal, Amri, Maktoum and Braim.

(d) Papaws — Jordan.

(e) Loquat — Matchless, Thames' pride, Heards' Mammoth, Jericho, and Tanaka.

The work in the nursery was mainly confined to the raising of Papaws, Pomegranates, Loquats and Annonas. The following seedlings and plants were issued during the year :

Papaws	500
Pomegranates	700
Budded mulberries	60
Loquat Seedlings	400
Others	60

Citrus : The orange trees are just coming into bearing as they were all budded on sour orange stock. Grapefruit, lemon and mandarine yields were heavier than that of the orange but the mandarines and some of the other citrus fruits were badly infested with Ceratitis capitata (Mediterranean fruit fly).

(1) The distance of planting experiments are beginning to show noticeable differences; it can be said that the trees planted 3 m. x 3 m. and 7 m. x 7 m. are the poorest; those at 7 m. x 7 m. are suffering from exposure while those at 3 x 3 m from over-crowding.

It should be noted that the plot planted at 3 m x 3 m is slightly more saline than the others. Plot planted at 4m x 4 m and 5 m x 5 m shows better health and growth.

(2) In studying the difference of development caused by irrigation applied at various intervals of 10, 14 and 21 days, it seems that trees in Jericho irrigated more frequently show more vigour and have better foliage. The yields of the trees irrigated every 10 days are slightly better than the others but the girth development this year is noticed more in trees irrigated every 14 days.

(3) In the stock experiments, a very noticeable difference in growth and development is to be recorded in Shamouti, budded on rough lemon in comparison with Shamouti on Sour stock or Sweet Lime.

Grapefruit as a stock for oranges and for grapefruit does not appear promising.

(4) The collection of citrus has been increased, there being at present 629 trees of 43 different varieties.

Bananas : The results of the first year "timing experiments" show that suckers that are left to grow in July — September, produce higher yields than those left to grow in the early summer months i.e. May—June—July.

Dates : The following varieties of dates were introduced from various countries :—

(a)	Daglat Nur	from California
(b)	Hayani	from the Deir el Balah
(c)	Amri	from Deir el Balah
(d)	Ashrazi	(from Iraq via Kinereth Nursery)
(e)	Bashi	
(f)	Bonfashi	do
(g)	Emir Haj	do
(h)	Hallawi	do
(i)	Mizawi	do
(j)	Khadrawi	do
(k)	Khustawi	do
(l)	Maktoum	do
(m)	Tabuzal	do
(n)	El Fard	(Moscate via Transjordan)
(o)	Hilali	do
(p)	Khalas	do
(q)	Kash Hanzal	do
(r)	Kash Hawami	do
(s)	Khewaizi	do
(t)	Barbi	do
(u)	Zaghloul	(from Egypt)
(v)	Samani	do
(w)	Saidi	do
(x)	Amri	do
(y)	Bint Aisha	do
(z)	Amhat	do

Papaws : The plants in general are not finding ideal conditions for their growth.

The following varieties are under trial :—

Madame Russel, Pernambuco, Cayenne, Jordan, Ceylon, Solo (from Honolulu), New Era (from U.S.A.), Bisexual (from Queensland), Prolific (from Queensland).

The fruit is not yet generally popular.

Loquats : Sidon white and Sidon red varieties have been introduced from Syria, and Dwarf, Heard's Mammoth, Matchless and Thame's pride from India.

Other Sub-tropical trees : Annonas are still doing well in Jericho. Avocados improved during the summer months. Good fruit was picked from the Fuerte, Puebla, Dickinson and Seedling varieties.

Persimmon trees are still fighting for their existence.

Jujubes are doing very well.

There are 16 varieties of pomegranates received from various parts of the world. The fruit is generally badly attacked by the pomegranate Butterfly and has to be bagged in paper bags for protection.

Litchi (*Chinese variety*) : 276 seeds were received from South Africa and sown. Some plants are still alive but in a poor conditon, as Jericho seems to be too dry for their development.

Cashew nuts were also tried but with very poor results.

Peach Palms—(Bacteris utilis) seeds were sown, but the germination was very poor.

Pereskia aculeata cuttings were planted out and the plants are doing well.

Jerusalem Horticultural Station.

The fruit trees at this station are not developing well, for two main reasons, shallowness of the soil and shortage of rains for several years. Many trees were attacked by Capnodis and Scolytus and died out.

The vineyard, planted in better soil, is progressing well.

About 7,000 budded fruit trees and 8,000 grafted vines were distributed during the planting season, also the following quantities of seeds :—

130,000 bitter almond

50,000 apricot

14,500 peach

19,000 buds were distributed, mainly plum, apricot and peach.

About 12,000 seedlings and suckers are being raised.

Beisan Horticultural Station.

As reported last year, the testing of various early varieties of grapes on different stocks is proceeding at this station.

All varieties grafted on Mourvedre x Rupestris 1202 are far superior to those grafted on Aramon x Rupestris Ganzin No. 1 or on Chasselas x Berlandieri 41B.

Prospects for early varieties of grapes in this area seem to be promising.

Farwana Horticultural Station.

This station was established in 1934/35. The water serving the three blocks that have been set out, was analysed and found to contain the following quantities of chlorine :—

Block A — watered by the Josak — contains 213 parts per million.

Block B — watered by the Madua — contains 88 parts per million.

Block C — watered by the Jamain contains 390 parts per million.

The three blocks contain about 30 dunams each and these were subdivided into 6 plots each ranging from 4½ to 5 dunams.

The plots in each block were planted out to :—

1. *Grapefruit* — Marsh's seedless.

2. Citrus — Budded Shamouti oranges and Sour Stocks to be budded to various other varieties in situ.

3. *Early varieties of Table-grapes* — Chasselas doré, Madeleine Oberlin, Salti, Joannenc charnu and Perle of Cezaba.

These were grafted on Mourvédre x Repestris 1202, Aramon Rupestris Ganzin No. 1, Bel x Riparia 8B and Chasselas x Berlandieri 41B.

4. *Dates* — Hayani

5. Sub-tropical Fruits — Pomegranates — (10 varieties) Pickling Olive varieties — (12 varieties).

6. *Bananas* — Cavendish, Baladi (as windbreaks around the Cavendish blocks).

Farradiya Horticultural Station.

The ravages of Capnodis in the nursery have been very serious, hundreds of seedlings being killed in their first year. The stocks were attacked in the following order of severity :—St. Julien, Myrobolan, Apricot, Peach, Mahaleb and Almond. Capnodis beetles are continually being collected and destroyed but new invasions appear from adjoining orchards.

Capnodis has also caused the death of many trees in the peach, apricot and plum orchards. Most of the plums on St. Julien stock have disappeared. These stocks are now being replaced by two local stocks, Swedah — Karrasia.

In the peach orchard, many trees budded on St. Julien and on Myrobolan have been destroyed, while in a few cases, peach and almond stocks were also attacked.

At the moment, it would appear that all varieties of plum, peach and apricot budded on local peach stock show the most vigorous development; the trees on almond and myrobolan rank next.

About 1100 budded deciduous fruit trees and 55,000 grafted vines were issued in 1934-35.

Nablus Horticultural Station.

In February, very heavy rains fell over the whole district causing a certain amount of soil erosion at the Station washing out of a few hundred cypresses, planted out as windbreaks, and also some of the almond and apricot seeds sown in the fruit-nursery. A section of 4 dunams at the top end of the Station was planted out to Carob seedlings which will later on be budded to better varieties of carobs.

The following new introductions were planted out :—

Olives: Grossa di Sicilia, Comune di Sicilia, Gorda, Blanquetta, Arbequin, Manzanilla, Sevillano, Chemlale, Rousette, Amelaou, Ispanico, Lucques, Verdale, Rougette, Grappolo, Taggiaschi, Rama Pendula, Della Madona, Quercetano, Leucocarpa, Margerita, Dolca del Marocco, Nabali, San Agostino.

Almonds: A-Pigna, Corneta, Desmayo, Del Diavolo, Nuova Zelandia, Marcona, Malaguena, Molesca, Mollar de la Sultane, Nonpareil, Zaccarella, Princesse Marguerite, Sultane, Della Regina.

Apricots: Bou Saada, Precoce du Rousillon, Muscat, Hatif Colomer, Primeriso Bulida, Canino, Newcastle.

Plums: Hative Meffre, First, Hatankio Maru.

Peaches: Triomphe, Red June, John River's, Carman, La Piu precoce.

Pears: Petit Muscat, St. Jean Doré, St. Jean Vert, Wilder, Valencia, Gentile Bianca, Primavera.

Hazelnuts: Precoce de Frauendorf, Principissa, Reale, Artelleta, Bergeri, Negreta de Reus, Purpurea.

Two thousand three hundred and sixty budded deciduous fruit trees and 4000 grafted vines were issued in 1934/35. There are 18,000 seedlings at present being raised in the nurseries of which about 5,000 are olives.

Majdal Horticultural Station.

The conditions at this Station have improved considerably during the year. New areas were planted out to vines, sub-tropical trees, and citrus.

In the sub-tropical section, the following introductions were planted out :—

Loquats :

Thames, Hards' Mammoth, Matchless, Tanaka.

Persimmons :

Baily, Hachya, Fuyukaki.

Mangoes:

Hindi Bisinnara, Mabroka, Pairi and Bishai.

Two new varieties of peach, Babcock and C.O. Smith were introduced from the U.S.A for trial.

An area of about 6 dunams was prepared and planted out to Citrus, in order to observe the effect of the water with its high content of Chlorine — 350 per million — on various citrus trees and on different stocks. The following were planted: — Marsh Seedless grapefruit budded on three stocks: sweet lime, rough lemon, and sour stock; Shamouti orange budded on rough lemon and sour stock; four varieties of lemons, Eureka, Lisbon, Baladi and Villafranca; and two varieties of grapefruit (Foster and Duncan).

The following budded trees were issued in 1934/35 :—

Apple	1160
Pear	680
Plum	777
Olive	78
Peach	402
Loquat	47
Quince	128
Almond	123
Walnut	20

There are some 10,000 stocks, 4—500 citrus seedlings, and 3500 olive suckers being raised.

A. G. TURNER.

Chief Horticultural Officer.

CITRUS FRUIT EXPORTED FROM PALESTINE — SEASON 1934/35

(in boxes)

Destination	Oranges	Grapefruit	Lemons	Other Citrus	Total (boxes)
United Kingdom	4,586,334	676,505	6,767	884	5,270,490
Germany	493,249	16,192	51	2	509,494
Holland	357,986	6,835	57	18	367,895
France	140,714	27,777	2,094	—	170,586
Roumania	143,356	2,426	19,235	10	170,027
Poland	153,137	9,949	—	—	163,086
Belgium	111,202	12,703	85	12	124,002
Sweden	105,357	2,910	56	2	108,325
Norway	99,062	6,635	94	—	105,791
Denmark	59,940	4,866	57	—	64,863
Czechoslovakia	57,710	4,176	—	183	62,069
Switzerland	35,331	9,042	1	5	44,379
Canada	35,845	247	—	—	36,092
Finland	35,300	359	—	—	35,659
Yougoslavia	26,849	262	11	12	27,134
Russia	22,448	5	502	—	22,955
Austria	11,049	650	—	—	11,699
India & Far East	5,830	3,392	815	—	10,037
Bulgaria	6,562	60	14	5	6,641
Aden	4,938	771	136	—	5,845
Ceylon	2,523	780	57	—	4,033
Egypt	1,531	1,609	—	—	3.140
Estonia	2,621	32	4	—	2,657
Port Sudan	996	126	10	—	1,132
Hejaz	977	—	—	—	977
Latvia	853	50	—	—	903
Syria	543	108	—	—	651
Lithuania	404	12	17	—	433
Turqey & Greece	287	2	—	—	289
Malta	—	150	—	—	150
Beira	60	15	15	—	90
Portugal	—	15	—	—	15
TOTAL	6,507,995	791,661	30,058	1,132	7,330,846

SHIPMENTS OF CITRUS FRUIT TO THE VARIOUS PORTS IN THE UNITED KINGDOM

Ports	Oranges	Grapefruit	Lemons	Other Citrus	Total (boxes)
Liverpool	1,291,387	156,680	442	85	1,448,594
London	1,070,855	245,880	1,562	240	1,327,537
Glasgow	819,391	48,771	238	45	868,445
Hull	375,098	30,010	87	330	405,525
Manchester	318,732	30,816	60	24	349,633
Southampton	214,920	54,243	53	42	269,285
Cardiff	147,138	11,923	—	—	159,061
Newcastle	116,423	11,705	—	—	128,128
Dublin	78,979	6,815	13	4	85,811
Bristol	66,200	5,266	—	33	71,499
Belfast	37,112	1,648	7	—	38,767
Avonmouth	17,984	946	91	10	19,031
Transit via Port Said	32,115	62,802	4,214	81	99,202
TOTAL	4,586,334	676,505	6,767	884	5,270,490

EXPORT OF CITRUS FRUIT FROM JAFFA,—HAIFA PORT AND VIA KANTARA

	Oranges	Grapefruit	Lemons	Other Citrus	Total (boxes)
Ex Jaffa	3,820,684	385,386	5,985	594	4,212,649
Ex Haifa	2,600,551	333,518	18,856	467	2,953,392
Via Kantara	86,760	72,757	5,217	71	164,805
TOTAL	6,507,995	791,661	30,058	1,132	7,330,846

REVENUE COLLECTED DURING THE FINANCIAL YEAR 1934/35

MONTH		CITRUS FRUIT ADVERTISEMENT FEES								FRUIT INSPECTION FEES							
		Jaffa Port		Haifa Port		Railways		Total		Jaffa Port		Haifa Port		Railways		Total	
		LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils
April	1934	356	196	5	472	17	796	379	464	355	567	2	689	16	601	374	857
May	"	—	060	—	—	—	007	—	067	—	—	—	—	—	—	—	—
June	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
July	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
August	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
September	"	2	994	3	136	1	098	7	228	—	650	—	—	1	098	1	748
October	"	11	780	26	819	55	795	94	394	11	709	10	288	55	506	77	503
November	"	536	414	50	564	53	674	640	655	534	321	40	843	53	621	628	785
December	"	737	547	410	556	31	693	1,179	796	733	428½	402	083	31	145	1,166	656½
January	1935	1,803	062	1,133	987	39	581	2,976	630	1,526	540½	986	050	35	078	2,547	668½
February	"	1,571	474	1,260	052	51	954	2,884	480	1,178	903	889	599	34	297	2,102	799
March	"	2,349	042	1,804	846	34	707	4,188	595	1,760	580	1,157	463	21	042	3,039	085
TOTAL		7,369	569	4,695	435	286	305	19,351	309	6,101	699	3,589	015	248	388	9,939	102

APPENDIX "C"

REVENUE COLLECTED DURING THE FINANCIAL YEAR 1934/35

MONTH		Fees collected for repacking, storage of citrus fruit, and inspection of groves before export date.					
		Jaffa		Haifa		Total	
		LP.	Mils	LP.	Mils	LP.	Mils
April	1934	18	475	—	—	18	475
November	"	19	—	5	775	24	775
December	"	26	330	17	350	43	680
January	1935	50	145	49	975	109	120
February	"	107	650	50	100	157	750
March	"	60	500	67	875	128	375
TOTAL		282	100	191	075	437	175

MONTH		Sale of Citrus Fruit used for experimentation	
		LP.	Mils
May	1934	2	600
June	"	1	700
July	"	1	—
March	1935	2	350
TOTAL		7	650

REVENUE COLLECTED DURING THE FINANCIAL YEAR 1934/35

Sale of Produce from Horticultural Stations

Month	Jerusalem		Jericho		Beisan		Majdal		Farradiya		Nablus		Acre		Sarafand		Total	
	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils	LP.	Mils
April, 1934	—	—	1	785	—	—	—	—	—	—	—	—	8	840	—	—	10	625
May "	—	—	10	505	—	—	—	—	—	—	—	—	18	300	—	—	28	805
June "	—	—	16	115	—	—	—	—	—	—	—	—	1	400	—	—	17	515
July "	—	—	13	105	—	—	—	265	—	—	—	—	—	—	—	—	13	370
August "	—	—	9	375	—	460	—	—	—	—	—	—	—	—	—	—	9	835
September "	—	—	14	030	—	—	—	—	—	—	—	—	—	—	—	—	14	030
October "	—	—	11	360	—	—	—	—	—	—	—	—	—	—	—	—	11	360
November "	—	—	15	130	1	920	—	—	—	—	—	—	—	—	—	—	17	050
December "	2	120	14	310	—	—	—	—	—	—	—	—	—	940	—	—	17	370
January 1935	78	490	8	495	—	—	11	580	11	760	—	—	60	660	—	—	170	985
February "	22	065	11	860	—	—	2	—	13	670	21	680	64	180	4	390	139	845
March "	8	295	4	450	—	780	—	640	9	440	11	090	36	030	1	500	72	045
TOTAL	110	970	130	520	3	160	14	305	34	870	32	770	190	350	5	890	522	835

REPORT OF THE GOVERNMENT ENTOMOLOGIST

The Black Scale (Chrysomphalus ficus) situation showed so much improvement this year that in many groves in the Jaffa area, it was unnecessary to fumigate the entire grove and a system of block fumigation was instituted each block comprising as nearly as possible 250 trees. In some very lightly infested groves where only a few trees were bearing scales, the infected trees and their contacts were treated. In the great majority of the groves, infestation was very light.

Acre sub-district also shows a marked amelioration. In only three groves in the Jaffa area was compulsory fumigation necessary, the great majority of the grove owners making their own arrangements for fumigation either with their own outfits or through contractors.

There was a general increase in the amount of spraying against C. aurantii (the Red Scale), growers in the Gaza area being the latest converts.

A new threat has arisen in the increased number of groves showing infestation with Lepidosaphes beckii. This has been revealed in the course of the inspection of groves north-east of Jaffa undertaken for the purpose of Black Scale survey. Lepidosaphes has spread southwards from Petah Tiqua and in several groves north of the Jerusalem-Jaffa road a light infection of Red, Mussel, and Black Scale is to be found in the same grove. Formerly Mussel Scale was supposed to be confined to the vicinity of Petah Tiqva and until this year's survey was undertaken, the extent of its distribution was unsuspected. Except in one case the infection is nowhere severe and it remains to be seen if it will become a serious threat to orange growing or remain in the status of a minor pest.

Another outstanding feature of the Summer and Autumn of 1934 was the widespread incidence of *Ceratitis capitata* which did a noteworthy amount of damage to the orange crop; and larvae were even found in walnuts. The coastal plain, the plain of Jezreel and the Jordan Valley all suffered in varying degrees. Flies were again found in the Horticultural Station at Jerusalem where they have not been seen for three years having apparently been killed by the snow fall of early 1932.

A series of spraying trials for the control of Codling moth (Cydia pomonella) combined with the use of chemical bands was initiated at three places representing different potential apple growing areas, on the plains at the Miqve Israel Agricultural School, at Kiriath Anavim Horticultural Demonstration Station, and at the Horticultural Station in Jerusalem.

Although apple culture cannot be said yet to be a major industry in Palestine very large numbers of trees are being planted annually. It is estimated that exclusive of local varieties which bear early in the year, some 100,000 trees of imported varieties have already been planted and 50—60,000 are being put in annually. It is well therefore to have the spraying programme and the fixing of average times of emergence of moths at different elevations completed before the newly planted trees come into bearing. Codling moth will certainly be a major problem for the apple industry to tackle. At present up to 60% of the fruit is unfit for marketing where no control is exercised.

In addition to apples, quinces and pears are equally attacked and walnuts suffer to a considerable extent. The Tiger moth, (Zeuzera pyrina) and Eriosoma lanigera will also prove serious pests.

Some progress has been made in collecting data for a vegetable pest calendar and a variety of insecticides suitable for use in vegetable gardens has been under trial.

Proprietary dusts and sprays containing "Derris" have proved successful and easy to apply and can now be purchased in Palestine.

Fruit-fly trapping bottles are increasing in popularity and grove owners are now prepared to purchase them for themselves. The bottles achieved a notable success in protection of late oranges; at one place 75% of the crop being saved. This was an important event since means are being sought to prolong the orange season and the most serious limiting factor has so far been the fruit fly. The bottles are made in the old established factory in Hebron but a factory which would manufacture them more rapidly and to a more standardised pattern would be welcomed.

The investigations into the life history and control of Capnodis sp. are proceeding. At the moment these beetles are the most important pests in the country threatening as they do the very existence of stone fruit growing in the hills or the plains.

It has now been possible to complete arrangements whereby the Entomological Service will be enabled to get into closer touch with cultivators other than orange growers than has been the case heretofore. A scheme of tours and demonstrations has been drawn up and has begun to be put into operation.

A trained Entomologist is now stationed in the centres from which the coastal plain, the Northern District and North of the Jordan Valley can be worked. The Hill area of the Southern District will be dealt with from Headquarters in Jerusalem. Field Laboratories have been established in Tiberias, Acre and Jaffa. These, combined with regular tours of Field Assistants and Plant Inspectors will enable the Service to keep track of insect incidence throughout the country and in each season and to maintain liaison with the Agricultural and Horticultural Services.

The investigations which were being conducted at Acre and Tiberias into the bionomics of the Black Scale have been mostly completed and it will be possible in consequence to recommend some modifications of fumigation procedure. This is undoubtedly the case in the Tiberias area where the present practice of summer fumigation will have to be abandoned in favour of winter fumigation.

Although winter fumigation would also be the best throughout the orange growing area the normal winter climate anywhere but in Tiberias would be against it.

At the time of writing it would seem that a new departure will be recorded this year (1935) in the fumigation of some 250,000 trees against Red Scale. Up to the present, most of the growers whose groves suffered from Red Scale attack either did nothing or preferred to spray. It is gratifying to feel that at least, opinion is inclining towards fumigation, although any effort at scale control is welcomed whether it be spraying or fumigation.

One very pleasing aspect of the fumigation situation is that costs have been considerably reduced bringing it within the reach of most grove-owners whose groves are paying at all. From 70 mils a tree in 1932 the price has now come down to 45 to 50 mils and there is the prospect of further reduction.

Litigation for the recovery of fumigation fees from those whose groves had been compulsorily fumigated during the last four seasons has absorbed a great deal of time and energy, and although most judgments have been given in favour of Government, few payments have been made.

Staff.

Two new Plant Inspectors were appointed for the Southern District. The Plant Quarantine Guards were increased from 17 to 23, and 6 new appointments of Laboratory checkers, who examine the kill of scales from fumigated trees, were also made.

Details regarding plant imports are given in Appendix A. and legislation passed during the year under report in Appendix B. Appendix C. consists of fumigation statistics—1934.

E. BALLARD.

Government Entomologist.

STATEMENT OF PLANT INSPECTION AND CONFISCATION DURING THE YEAR 1934/35

Station	April 1934		May		June		July		August		September		October		November		December		January 1935		February		March	
	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf	Insp	Conf
Jaffa	187	—	132	4	101	2	56	18	98	11	97	6	197	5	207	2	165	2	220	2	191	2	336	5
											3*				2*		7*						2*	
Haifa	312	19	164	10	115	9	82	8	75	14	137	19	198	14	274	24	370	38	401	69	360	28	328	26
																	2*							
Jenin	25	63	18	52	11	29	14	26	19	42	22	38	10	24	7	45	5	39	10	53	10	42	12	38
Rosh Pinna	73	7	105	16	254	13	271	8	207	6	230	27	346	13	300	6	188	3	95	2	102	2	129	8
Naqura	93	3	80	10	80	1	242	6	188	3	249	—	198	2	81	—	51	1	24	—	12	1	48	—
Zikhron	—	41	—	48	—	29	—	21	—	11	—	2	—	28	—	28	—	28	—	31	—	36	—	21
Jerusalem	79	—	58	—	35	—	2	—	—	1	11	2	54	—	11	3	33	—	32	—	39	—	93	—
	769	133	557	140	596	83	667	87	587	88	749	94	1003	86	882	108	821	111	782	157	714	111	948	98

* Re-Exported.

Total Inspected 10,371
Total Confiscated 1,296
Total re-exported 16

APPENDIX B.

ORDERS, REGULATIONS AND AMENDMENTS TO PLANT PROTECTION ORDINANCE PUBLISHED 1934/35

Short title of order or regulation	Date of publication and No. of Palestine Gazette		Remarks
Plant Protection (Amendment) Ordinance, 1934	P.G.443	31.5.34	Empowering Plant Inspectors to order measures for the control of pests and diseases and responsibility of share holders
Plant Protection (Citrus Groves Fumigation) Regulations 1934	P.G.445	2.6.34	Fumigation charges
Plant Protection Order (No. 3), 1934	P.G.466	6.9.34	Amendment to Schedule I and II of the Plant Protection order No. 2 1934 re import of plants.
Plant Protection (Amendment) Regulations, 1934	P.G.467	14.9.34	Amendment of regulation 3 of the Plant Protection Regulations, 1933 re movement of plants from Northern Palestine to any other part of Palestine.
Plant Protection Order (No. 4) of 1934	P.G.470	30.9.34	Deletion of para. 3 of Plant Protection Order (No. 2) 1934
Plant Protection Order (Nursery) Rules 1934	P.G.482	16.12.34	Licensing and control of nurseries
Plant Protection Order, 1935	P.G.502	29.3.35	Amendment of Plant Protection Order (No. 2)

APPENDIX C.

FUMIGATION STATISTICS 1934

NO. OF TREES FUMIGATED		185,474
By Government	147,206	
Privately	38,268	
NO. OF TREES CUT DOWN		4,192
By Government	2,927	
Privately	1,265	
NO. OF TREES PRUNED		35,777
By Government	8,070	
Privately	27,707	
NO. OF GROVES FUMIGATED		400
By Government	346	
Privately	54	

REPORT OF THE SERICULTURAL OFFICER.

Experiments in sowing of mulberry seeds and planting cuttings were carried out at Jericho, Beisan, Tiberias, Gaza and Nablus.

The Nablus Nursery supplied the majority of the seedlings raised this year, i.e. 45,000, of which only 24,000 were distributed, as the remaining seedlings were unsuitable for field planting.

As a result of propaganda, many agriculturists applied for mulberry plants and the Sericultural Service familiarised them with mulberry cultivation and silkworm rearing.

An agriculturist from Manshiya Village who had no mulberry trees, picked the leaves from a Government plantation in order to feed his silkworms. This was his first attempt to rear silkworms and his cocoons were of very good quality.

Rearings were successfully carried out in the following Government and private schools :—

(a)	Government Boys' School,	Hebron.
(b)	Beit Sefer Amami,	Eqron.
(c)	Children's Settlement,	Mishmar.
(d)	Government Boys' School,	Lydda.
(e)	Kadoorie Agricultural School,	Tulkarm.
(f)	Beit Sefer Amami,	Magdiel.
(g)	Beit Sefer Amami,	Ra'anana.
(h)	Government Boys' School,	Shefa Amr.
(i)	Beit Sefer Amami,	Ness Ziona.
(j)	El Falah School,	Gaza.
(k)	Government Boys' School,	Jenin.
(l)	Beit Sefer Amami,	Sejera.
(m)	Children's Village,	Ben Shemen.
(n)	Beit Sefer Amami,	Yavneel.
(o)	Beit Sefer,	Kefar Yehezkel.
(P)	Agricultural School,	Miqve Israel.
(q)	Beit Sefer Amami,	Kefar Tabor.
(r)	Government Boys' School,	Sarafand El Kharab.
(s)	Government Boys' School,	Gaza.
(t)	Gymnassia Lebanoth,	Jerusalem.
(u)	Beit Sefer Amami,	Kefar Saba.
(v)	Beit Sefer Amami,	Ramat Gan.

A primitive (domestic) reeling was organised at the Shefa Amr Government School.

Modern rearing materials were distributed on loan to private individuals and schools as under :—

1.	Boxes for collection.	2.
2.	Shelves.	4.
3.	Ladders.	2.
4.	Poles.	24.
5.	Trays.	41.
6.	Thermometers.	2.
7.	Lamps (Kerosene).	2.
8.	Bottles for silkworm.	1.
9.	Incubators.	2.

Young pupils of the Children's Settlement at Mishmar Haemek compiled a small illustrated booklet on Sericulture which shows the interest and the educational influence of small rearings.

The Sericultural Officer continued his lectures at the Tulkarm Agricultural School where 18 students and 18 village schoolmasters were trained in Sericulture.

J. DE LEON.

Sericultural Officer.

23/5/35

REPORT ON FISHERIES.

The Fisheries Service which was established in 1927 was abolished five years later on the recommendation of the Financial Commission in 1932, mainly for reasons of economy. Since then various problems arose, the solution of which was not possible in the absence of technical advice and data. Consequently, a Fishery Expert, Mr. J. Hornell, F.L.S., F.R.I., was appointed to undertake a survey of fisheries in Palestine. This survey was carried out between the months of July and November, 1934, and his report has already been submitted. Generally, Mr. Hornell's recommendations are to build up the fishing industry gradually step by step, rather than to embark at the outset on an elaborate and expensive programme. The report lays stress on the fact that the problems of the Palestine fishing industry are mainly economic rather than scientific, and that there is no evidence of a dearth of fish off the Mediterranean Coast, but that fishery resources are inadequately exploited on the part of the fishermen. The report also emphasises the considerable damage done through the use of dynamite. It is intended that the Fisheries Service, when re-established, shall devote itself to the enforcement of fishery laws and regulations and the improvement and development of the existing industry through demonstration and better economic organisation rather than through biological research.

The estimated catch of fish in 1934/35 was 1,840 tons with an estimated value of £P.56,800 as compared with 1,541 tons with a value of £P.52,763 in 1933. In spite of the higher catches, imports of fresh fish from Egypt, Iraq and Syria, were continued owing to the increase in demand.

Italian trawlers continued to visit Palestine waters during the summer. They increased their catches in Jaffa waters to 397 tons as compared with 203 tons in 1933.

The use of the lampara net (with artificial light) has resulted in larger catches of sardines and the use of this net will consequently be much extended in the future.

Detailed statistics are attached showing the kinds of fish caught, month by month, and their values, at different places in Palestine.

DETAILS OF FISH CAUGHT AND FIRST SELLING PRICE
HAIFA 1934—35

Kind	April	May	June	July	August	September	October	November	December	January	February	March	Total	
													Weight	Value
	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	LP.
Asfour	—	—	—	—	—	—	700	—	—	—	—	—	700	38
Asfida	—	—	—	—	—	—	—	—	—	700	—	—	700	28
Balamida	3000	4200	—	—	—	—	—	—	—	—	—	1200	8400	252
Bouri	9300	8400	2400	5200	5200	6400	4200	3000	6000	10000	9500	7800	77400	4130
Dawakir	2840	2470	1800	1940	2600	900	1000	950	1700	1000	1000	2400	20600	1112
Farriden	470	780	900	855	1150	650	875	500	—	570	—	—	6750	957
Gobbos	—	—	—	3000	—	—	1400	2400	—	—	—	—	6800	242
Gounbar	1500	1700	800	900	1450	1895	1000	1240	1800	450	1980	1800	16515	1006
Intias	1150	1800	2400	700	—	—	—	700	1200	850	—	—	8800	516
Jarbeeden	2100	2150	3000	2000	2000	1955	1200	1450	5470	3800	2400	2500	30025	1484
Manurin	—	—	—	—	950	—	—	—	—	—	—	—	950	42
Maramir	845	780	1200	1240	1000	2900	2470	2560	1800	700	850	840	17185	664
Malita	—	—	—	—	—	—	—	500	—	500	—	—	1000	55
Mouskar	2000	2100	1900	1400	2300	3100	3900	2000	2750	950	4500	2200	29100	1642
Ockar	—	—	—	—	700	—	—	—	—	—	—	—	700	21
Sardyna	24300	29450	30000	18000	15000	23000	24570	29000	4400	3800	7000	1500	223520	3456
Saraghis	—	—	500	560	1200	900	—	—	1900	—	—	—	5150	253
Scumbly	—	—	—	—	—	1200	2700	2950	—	—	—	—	6850	313
Sultan	1200	2400	1700	1890	1550	3150	3560	2450	4500	2700	2000	7100	34200	1606
Tourgolis	—	—	—	—	—	—	—	—	—	—	450	—	450	27
	48705	56230	46600	37775	35100	46050	47575	49700	31520	26020	29680	40840	495795	17484

DETAILS OF FISH CAUGHT AND FIRST SELLING PRICE

ACRE 1934—35

Kind	April	May	June	July	August	September	October	November	December	January	February	March	Total	
													Weight	Value
	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	LP.
Bouri	840	900	800	700	840	600	570	500	500	850	600	800	8500	453
Dawakir	600	700	500	300	250	350	400	630	700	500	—	500	5430	324
Farriden	300	500	300	200	350	290	315	450	400	—	—	450	3555	338
Gounbar	450	460	100	—	240	200	300	670	270	1200	400	—	4290	255
Gobbos	—	—	200	840	—	—	—	—	—	—	—	—	1040	33
Intias	500	700	100	—	—	—	—	—	690	—	—	—	1990	107
Jarbeeden	470	600	100	300	600	250	150	300	200	1000	450	640	5060	254
Malita	—	—	—	—	—	—	—	—	—	800	—	—	800	40
Manurin	—	—	240	—	300	—	—	—	470	—	—	—	1010	50
Maramir	700	300	100	680	450	250	315	600	560	980	150	560	5645	226
Mouskar	470	500	200	670	750	640	700	1500	500	1000	500	1450	8880	525
Sardyna	1400	—	—	2000	1800	1820	2400	—	—	—	—	—	9420	151
Saraghis	—	—	—	—	—	500	200	350	600	—	—	—	1650	90
Scumbly	—	—	—	—	—	200	100	—	—	—	—	—	300	17
Sultan	800	900	—	700	800	400	350	400	1500	850	300	600	7600	389
Subby	—	—	—	300	—	—	—	—	—	—	—	—	300	15
	6530	5560	2640	6690	6380	5500	5800	5400	6390	7180	2400	5000	65470	3267

DETAILS OF FISH CAUGHT AND FIRST SELLING PRICE
ZEEB 1934—35

Kind	April	May	June	July	August	September	October	November	December	January	February	March	Total	
													Weight	Value
	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	LP.
Balfider	—	—	—	—	—	—	—	—	—	900	—	1200	2100	84
Bouri	700	600	900	—	700	—	—	—	1400	700	400	700	6100	329
Dawakir	200	300	500	—	—	—	—	—	—	—	—	—	1000	61
Farriden	—	100	—	—	—	—	—	—	—	—	—	200	300	29
Gobbos	—	—	—	—	—	200	500	470	—	—	—	—	1170	43
Gounbar	—	—	—	—	—	—	—	—	—	—	300	—	300	18
Intias	450	170	120	—	—	—	—	—	600	—	100	—	1440	85
Manurin	300	340	—	—	—	—	—	—	—	—	—	—	640	29
Saraghis	500	—	—	—	—	—	—	—	1200	—	—	—	1700	73
Sardyna	—	—	3000	2200	3050	1800	2000	2700	—	—	—	—	14750	221
Scumbly	—	—	—	900	300	800	215	300	—	—	—	—	2515	132
Tarokhon	—	—	—	—	—	—	—	—	—	500	—	—	500	20
	2150	1510	4520	3100	4050	2800	2715	3470	3200	2100	800	2100	32515	1124

DETAILS OF FISH CAUGHT AND FIRST SELLING PRICE
TANTOURA 1934—35

Bouri	800	450	400	300	390	200	190	200	1200	600	1200	780	6710	398
Dawakir	—	—	150	200	150	60	—	—	—	—	—	—	560	33
Gounbar	350	200	—	—	—	—	—	—	1700	1200	700	—	4150	239
Intias	—	—	—	—	—	—	200	100	—	—	—	—	300	18
Manurin	—	—	200	—	—	—	—	—	—	—	—	—	200	8
Mouskar	600	500	—	—	500	150	220	500	1000	1400	600	500	5970	353
Saraghis	200	150	400	400	—	—	—	—	—	—	—	—	1150	60
	1950	1300	1150	900	1040	410	610	800	3900	3200	2500	1280	19040	1109

DETAILS OF FISH CAUGHT AND FIRST SELLING PRICE AT JAFFA DURING 1934/35

Kind	April	May	June	July	August	September	October	November	December	January	February	March	Total Weight	Value
	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	LP.
Bouri	5890	2300	645	800	2000	1200	6800	1200	2030	501	350	895	24631	1420
Boursh	1250	1250	750	—	470	156	200	700	575	87	125	67	5630	31
Dawakir	4600	4780	510	450	580	350	1750	950	1026	750	395	3901	20042	1098
Farriden	—	310	290	170	—	—	50	120	209	574	50	282	2055	162
Gounbar	—	—	—	600	—	—	900	300	2052	354	387	774	5367	351
Intias	—	—	—	—	—	—	—	545	1022	—	—	—	1567	84
Jarbeeden	15451	10714	18800	12173	24375	19400	34924	22152	7000	6290	4341	8640	184260	5736
Kelb el Bahr	890	800	356	—	300	80	87	287	230	156	70	320	3546	29
Malita	—	—	1795	—	—	—	—	—	—	—	—	—	1795	89
Maramir	—	—	—	—	—	—	2000	1459	567	78	90	—	4194	170
Mouskar	—	—	—	350	660	450	1500	3550	3954	1806	1288	1976	15534	942
Saai	5720	13460	3004	—	—	600	—	—	–	—	—	—	22784	779
Samak Musa	3548	6803	5600	—	—	—	—	—	—	—	—	—	15951	530
Saraghis	675	250	480	785	128	—	800	1004	1574	213	276	342	6527	292
Sardyna	3380	8500	14275	10800	2400	—	—	—	—	9900	—	—	49255	936
Sultan Ibrahim	12272	14653	21600	8000	32005	55377	17462	16000	15763	8000	5000	15233	221365	6879
TOTAL	53676	63820	68075	34128	62918	77613	66473	48267	36022	28709	12372	32430	584503	19528

DETAILS OF FISH CAUGHT AND FIRST SELLING PRICE AT JOURA 1934/35

Kind	April	May	June	July	August	September	October	November	December	January	February	March	Total Weight	Value
	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	LP.
Bouri	3470	600	1500	1020	760	500	3000	2650	2560	350	225	1450	17485	870
Boursh	700	370	340	650	290	60	580	345	600	34	35	125	4129	20
Dawakir	6850	2700	1500	755	320	350	2500	2300	2800	285	467	2860	23687	1099
Farriden	—	500	355	—	—	—	75	250	64	27	—	50	1321	83
Gounbar	—	—	—	200	—	—	200	775	2376	128	77	200	3947	204
Kelb el Bahr	500	1200	165	—	100	178	120	300	500	112	85	70	3330	20
Malita	—	—	1252	—	—	—	—	—	—	—	—	—	1252	50
Mouskar	—	—	—	300	575	250	350	2550	1950	465	315	800	7555	357
Saraghis	350	480	270	550	69	—	600	800	350	150	76	98	3793	204
Sardyna	3000	5800	4500	3500	200	—	—	—	—	3900	—	—	20900	309
TOTAL	14870	11650	9882	6975	2314	1338	7425	9370	11191	5451	1280	5653	87399	3216

DETAILS OF FISH CAUGHT AND FIRST SELLING PRICE AT GAZA 1934/35

Kind	April	May	June	July	August	September	October	November	December	January	February	March	Total Weight	Value
	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	Kgs.	LP.
Bouri	2100	1760	350	500	400	462	1800	750	1000	150	500	800	10572	568
Boursh	250	800	520	150	350	58	240	92	135	70	45	250	2955	19
Dawakir	400	350	1600	360	190	79	750	350	250	45	30	675	5079	284
Farriden	—	—	85	—	—	—	80	67	100	80	—	—	412	30
Gounbar	—	—	—	—	—	—	450	225	670	366	125	187	2023	114
Kelb el Bahr	400	200	421	400	75	36	—	135	77	—	50	100	1894	15
Malita	—	—	890	—	—	—	—	—	—	—	—	—	890	36
Mouskar	—	—	—	—	—	270	150	450	850	244	90	740	2794	160
Saraghis	150	—	325	140	250	—	500	178	450	95	80	277	2445	129
Sardyna	2760	2000	2570	1500	—	—	—	—	—	800	—	—	9630	185
TOTAL	6060	5110	6761	3050	1265	905	3970	2247	3527	1850	920	3029	38694	1540

APPENDIX VIII.

BOATS AND MEN ENGAGED IN FISHING

1934—35

Fishing Ports	Boats	Fishermen
Zeeb	5	25
Acre	35	50
Haifa	115	340
Tantoura	9	25
TOTAL	164	440

APPENDIX IX.

NUMBER OF BOATS AND FISHERMEN EMPLOYED DURING 1933 AND 1934 IN THE SOUTHERN DISTRICT

Locality	1933		1934	
	No. of Boats	No. of Fishermen	No. of Boats	No. of Fishermen
Jaffa	173	199	173	183
Joura	34	77	35	77
Gaza	23	44	25	51
Jabalya	—	—	—	18
Nazla	—	—	—	20
Hamama	—	—	1	7
Deir el Balah	—	—	4	4
Hirbya	—	—	4	7
Khan Yunis	—	—	—	3
TOTAL	230	320	242	370

REPORT ON THE

KADOORIE AGRICULTURAL SCHOOLS.

I. Tulkarm School.

This school completed its fourth year of instruction.
The classes at present consist of :—

		No of Students.
(1)	Extension class for training village schoolmasters.	10
(2)	2nd year students.	18
(3)	1st year students.	30
	Total	58

All the above students are in residence, and their number will be increased to seventy next scholastic year, as the new wing has now been completed. In addition to these three classes, there is a class for seventeen teachers who reside outside the school, in a Hostel, and undergo a year's elementary course in theoretical and practical agriculture. These teachers are selected by the Department of Education, the expenses of their training being met out of a special grant from the Near East Foundation. When these teachers return to their schools they will be capable of teaching elementary agriculture, both theoretical and practical in the villages, thus giving a desired rural bias to education.

The first Diploma Day was held in March and was a great success. His Excellency the High Commissioner personally distributed the diplomas to the twenty eight successful students, who passed their final examinations in July, 1933, in the presence of a representative gathering of over 300 visitors, including Senior Government officials, landowners and parents of the students. In the course of his address, His Excellency announced Government's intention to extend the school to accommodate a further thirty students, bringing the total number to seventy, thus :—

1st year students.	30
2nd year students	30
Extension Class	10
Total.	70

The greater part of the cost of the new wing was provided from the private purse of the High Commissioner. In addition, two hundred dunams of adjoining land are being acquired, thus increasing the total to six hundred and five dunams to enable the students to devote a little more than half their time to practical work.

The new wing, in addition to providing for thirty additional students, includes a sick bay, matron's quarters, a recreation room, and a museum and library.

Specimens are collected for the museum, and in time, a good collection of seeds, manure, feeding stuffs, plants, canned and preserved products, etc., will be available.

Appropriate text-books are being gradually added to the library which is put to good use by the students.

Excellent wheat and barley yields were obtained, the average being 157 kilos and 163 kilos per dunam respectively. The winter crop yields were by far the best in the district.

Other crops were also good, especially the gilbaneh which cut at 412 per dunam for hay.

A small plot of soya beans was put down as a test crop, and on account of the luxurious growth, a larger area is to be sown next year, both for silage and seed.

Students who knew the school lands in 1930, and have now seen the high yields obtained appreciate the advantages of proper cultivation and management.

Vegetables. Considerable advance has been made in this section, especially with tomatoes, and various varieties are being tried out for their canning qualities.

The area of the nursery has been extended and local demands for seedlings can be met. Various varieties of ornamental timber trees and carobs were raised from seed and planted on the school lands.

Orchard. The trees are now bearing and giving good results, particularly the apricots. The orchard is being extended year by year so that the students may have practical experience in this important branch.

Part of a forest reserve at Ras Amer was planted by the students on an area of 40 dunams with carobs, pines, fruit trees and vegetables, in order to demonstrate the making of terraces and to teach the students how to derive some revenue from hilly land.

Livestock. The livestock at the school comprises two herds, viz: Damascus-Beirut cows, headed by a pure South Devon bull, and a Baladi (native) herd with a Syrian bull.

It is too early definitely to report on the Damascus-Devon cross, but the young stock are promising.

Sheep and Goats are doing well, and in December an Anglo-Nubian cross goat gave birth to 5 kids — one was born dead but the other four are doing well.

The Baladi (native) poultry pen gave a good laying record and there is every hope of producing a good improved local breed.

Bees. The introduced Italian Queens were very successful, and the hives gave good yields of honey. An observation hive was acquired to enable students to watch the working of the bees.

Hatching and rearing of silkworms form part of the 2nd year syllabus, and every encouragement is given to the students to continue this work as a subsidiary domestic industry in their villages.

Students were taught how to milk the cows and make cream, butter and cheese.

Percentages of butter fat from each cow are determined by the students who keep the records of each individual cow.

A fruit canning section was introduced to teach students how to can vegetables and fruit, including cucumbers and cauliflowers, tomatoes and beans.

There is a good spirit of esprit de corps among the students and it is gratifying to record that past students have revisited the school and intend to form an ex-students union.

II. Mt. Tabor School.

The Kadoorie Agricultural School at Mount Tabor was officially opened by His Excellency the High Commissioner on the 20th June, 1934, when the tablet erected to the memory of the founder Sir Ellis Kadoorie was also unveiled in the presence of Government officials, notables, and the parents of the students.

The preparation of the fields, however, was commenced in August, 1933, and at this date an area of 600 dunams has been cleared of shrubs and stones and is now cultivated with wheat, barley, vetch and oats for hay and maize for grain and for silage.

The vegetable garden of 16 dunams under irrigation is cultivated with potatoes, cucumbers, tomatoes, egg-plants, garlic, onions, lettuce, Jerusalem artichokes and strawberries. Part of the vegetabales is supplied to the school kitchen, another part to the cannery, but the greater part is sent to the market for sale.

An area of 16 dunams is devoted to the cultivation of forage crops under irrigation : Egyptian clover, stock-beets, green maize and lucerne. In future, a much larger area will be devoted to the cultivation of vegetables and forage crops under irrigation, for which purpose, irrigation pipes have already been laid over an area of 120 dunams.

The hill on the top of which the main school building is situated has been afforested, namely, 49 dunams with 7,364 trees, mainly Pinus halepensis, Eucalyptus rostrata and carobs.

Six alleys of a total length of 1,450 metres were also planted with 838 trees.

Some 6,065 fruit trees and 10,265 timber trees were raised in the school nursery.

A vineyard of 20 dunams was planted with table grapes, a fruit orchard of 16 dunams was planted with apples, Japanese plums, persimmons and olives, and a citrus grove has been laid out over an area of 10 dunams.

The farm was well equipped during the year with machinery, including a tractor for ploughing, drills and planters for sowing, a mower, binder and threshing machine for harvesting, and all necessary hand-tools for gardening, as well as apparatus for combatting pests and diseases.

The dairy has been completed with 38 head of dairy animals, composed of 22 milking cows of Dutch-Syrian cross-breed, 2 bulls (one Frisian-breed for stud purposes and a pure Dutch-breed raised at the school), 5 heifers and 9 large calves raised locally. The average milk yield per head was 4,168 litres, with an average butter fat content of 3.8%.

The students are taught to make cream, butter, cheese, lebben and kefir. The greatest part of the milk is sent to Haifa for sale through the "Thnuvah" Co-operative Society.

A herd of sheep has been started with.

Incubators, brooders and minor poultry equipment have been acquired and the incubator-room, cellar and laying houses are already completed.

Good results were obtained from the cannery and the following products were prepared :— Tomato juice, tomato sauce, tomato Ketchup, solid-packed tomatoes, pickled cucumbers, pickled olives by the Spanish, Californian and Greek processes, apple sauce, apple and pear jam, grape-butter and grape-syrup.

Preparations are now being made for canning on a large scale for sale on the market, including preserved cabbage, cauliflowers and grape-fruit.

An all-weather road has now been completed which connects the school with the main Affula-Haifa road, and a telephone connection has now been installed between the school and Nazareth.

Although the school was officially opened only in June, the following staff was appointed in January, 1934, for preparatory work :—

Farm Manager, Stockman, Instructor in Horticulture and Canning, Instructor for Poultry and Bee-keeping, Vegetable Instructor and a Science Master.

The number of students now in residence is twenty-six and in September, 1935, a new class will bring the total to fifty students.

The students devote five hours in the morning to work on the farm and four hours to instruction in the class rooms and laboratories in the afternoon. The Principal reports that the students are keen on their studies both on the farm and in the class room and that discipline and conduct are satisfactory.

In November a course for shepherds was instituted, and forty-five shepherds from twenty-five surrounding settlements who attended expressed great appreciation of the benefits derived from this course.

Vegetable seedlings were also distributed to school-gardens at Mes'ha and Nahalal and the Principal of the School and Staff are in touch with surrounding settlements and afford advice when required, on agricultural matters generally.

GENERAL AGRICULTURAL COUNCIL.

REPORT FOR THE YEAR ENDING 31ST MARCH, 1935.

The membership of the Council is as follows :—

Chairman : Mr. M.T. Dawe, O.B.E., F.L.S.,
Director of Agriculture and Forest

Members : Mr. F.J. Tear,
Deputy Director of Agriculture and Forests.
Mr. A.F. Nathan, O.B.E.,
A/Registrar of Cooperative Societies.
Sheikh Khalil el Azzeh.
Mr. A.P.S. Clerk, M.B.E.
Rafi' Bey Fahoum.
Nicola Eff. Gelat.
Dr. M.B. Hexter.
Sheikh Mustafa el-Kheiri.
Dr. J.I. Kligler.
Abdul Rahim Eff. Nabulsi, M.B.E.
Father A. Sacchetti.
Jamil Eff. Shawa
Mr. M. Smilansky, M.B.E.
Mr. H. Viteles.
Mr. E. Volcani, M.B.E.
Mr. G. Wagner.
Mr. H. Wolfson.

Secretary : Mr. M. Brown, M.B.E.

The Council held seven meetings during the year, apart from the meetings of the nine Committees for Agricultural Economics and Marketing, Agricultural Chemistry, Horticulture, Citrus Fruit, Plant Protection, Irrigation, Agricultural Education, Animal Husbandry, and Agronomy.

The total membership of the Council and Committees is 144.

The Council continued to review at its periodic meetings, the reports and recommendations of the various Committees which can be conveniently dealt with under five principal subjects, namely :—

I. *Trade in, and Customs Duties on, Agricultural Products.*

II. *The Citrus Industry.*

III. *Animal Husbandry.*

IV. *Agricultural Education.*

V. *Legislation.*

I. TRADE IN, AND CUSTOMS DUTIES ON, AGRICULTURAL PRODUCTS.

(a) *Trade Delegation to Europe.*

On the recommendation of the Council and the Committees concerned, Government instituted enquiries as to the possibilities of finding new markets and expanding existing markets for the export of citrus fruit to Europe, and as to the quota and currency restrictions in force.

At the date of this report, replies have been received, summarised, and distributed to members for examination and recommendations.

(b) *Enquiry into the Future of the Nablus Soap Industry.*

The Council and Committee on Agricultural Economics and Marketing submitted their recommendations to Government on this report.

(c) *Oils, Oil-Seeds and Fats.*

Arising out of the recommendations under (b) the Secretary of the Council prepared a "Survey of Foreign Markets for Olive Oil and Olive Oil Soaps, and Proposals for re-organising the Olive Oil Producing Industry in Palestine", in conjunction with the Imperial Institute, and a Committee was set up by the High Commissioner to examine this subject and make recommendations as to the measures necessary to improve the local olive and olive oil industry.

The recommendations of that Committee have since been submitted to Government.

(d) *Butter and Milk-Cream.*

A Committee has also been set up to recommend to what extent the customs duties on these products should be increased.

(e) *Onions.*

The Committee on Agricultural Economics and Marketing examined a proposal to increase the duty on onions but owing to the small production and the possibility that higher duties would encourage imports from Syria, the proposal was not pursued.

(f) *Potatoes.*

Government approved the recommendation of the Council and Committee on Agricultural Economics and Marketing to increase the duty on potatoes from £P.1 to £P.3 per ton during 1st April to 15th July, which has had most encouraging results. Interest in potato cultivation has been aroused and the areas under potato cultivation are increasing.

(g) *Meat and Fish Meals.*

Government approved the recommendation of the Council and Committee on Agricultural Economics and Marketing to abolish the duty on meat and fish meals in order to cheapen the cost of these products which are used as poultry food.

(h) *Clearing House.*

Proposals were submitted to Government to the effect that there should be a substantial increase in the customs duties on imports from countries which do not purchase from Palestine goods to the value of say one third of those they export to Palestine. This proposal is still under consideration.

(i) *Most-Favoured-Nation Clause.*

Recommendations were made to Government for the application of this clause to Palestine, in treaties between Great Britain and other countries.

(j) *Trade Delegation to Egypt.*

Urgent recommendations were made to Government for the despatch of a Delegation to Egypt. The despatch of such a Delegation was finally approved and a Delegation visited Egypt in May, 1935.

(k) *Barley.*

A Memorandum on the production, imports, exports and prices of barley was prepared by the Secretary of the Council in May, 1934, and the possibility of resuscitating the trade in malting barley is still under consideration by the Committee on Agronomy. The possibility of advances to barley cultivators on their crops was also considered and the customs duty on barley was increased from £P.1 to £P.2 per ton on the 19th June, 1934, and then to £P.3 per ton on the 24th August, 1934, in the interests of the Palestinian grower.

II. THE CITRUS INDUSTRY.

The Citrus Fruit Committee continued to give valuable advice to Government for effecting improvements in the conditions of the transport of the citrus crop, involving such questions as dates for picking the fruit; feeder roads to railway stations and sheds thereat; storage and lighterage of fruit at ports; "counts" and sizes of boxes; and fruit inspection.

At the request of the Council, the Secretary prepared a memorandum on an Export Control Board, for the information of members, and in view of the difficulties to be faced in the transport and marketing of the ever-increasing crop, a Committee was set up by the High Commissioner to "study the present methods of transportation of the citrus crop from the grove to ports of destination and of marketing generally and to make recommendations for the improvement thereof".

Organic Manure.

Suggestions had been made that the removal of organic manure in village lands should not be permitted as such removal was impoverishing the soil. This proposed restriction would seriously affect the Citrus Industry since organic manure is an essential requirement of that industry. At the request of the Council, the Secretary compiled a memorandum on "Organic Manure in Palestine, and Problems connected with its supply, conservation, and the demand therefor", and a Sub-Committee was set up to study and report on this question. The Committee has held five meetings and taken evidence in various districts from interests concerned.

III. ANIMAL HUSBANDRY.

(a) *Poultry Disease Specialists.*

Recommendations were made to Government for the appointment of more poultry disease specialists as the reduction of mortality in poultry is considered to be a vital factor in the reduction of costs of production.

(b) *Tuberculosis.*

The Chief Veterinary Officer prepared for the Council detailed memoranda containing specific proposals for the control of tuberculosis in cattle. Owing to

the relatively high cost of these proposals and the fact that the incidence of tuberculosis among cattle is not unduly high, the recommendations of the Council have not yet received the approval of Government.

(c) *Honey.*

The Committee on Agricultural Economics and Marketing presented a valuable report to Government outlining proposals for the expansion of the bee-keeping industry. Several of the recommendations have already been implemented.

IV. AGRICULTURAL EDUCATION.

The Council recommended to Government that arrangements should be made for deserving students at the Kadoorie Agricultural Schools, to receive some additional training after their two-year course at such places and in such subjects and for such a period as is considered necessary by the Department of Agriculture.

The Council also recommended that arrangements should be made at Mount Tabor School for the training of selected rural school teachers in the elements of Agriculture, as is done at the Tulkarm School.

Proposals for introducing uniformity in the syllabuses and standards of the various Agricultural Schools in Palestine are still under consideration.

V. LEGISLATION.

(a) *Nurseries.*

The Council examined and recommended the enactment of legislation for the control of nurseries which has since been introduced by Government.

(b) *Tree Planting.*

A Sub-Committee was set up to examine a proposal that villages should be compelled to plant timber, olive and carob trees. The Committee toured different parts of the country to see afforestation work in progress, and to examine local conditions on the spot, prior to deciding whether legislation is necessary or advisable.

(c) *Rural Property Tax Ordinance.*

It was unfortunate that this Ordinance had to be enacted prior to its detailed examination by the Council. Government therefore approved the appointment of a Sub-Committee of the Council to examine this Ordinance and to submit any proposals for amendment which the Council may consider necessary.

M. BROWN.

Secretary

General Agricultural Council.